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Obtained from selected Mysore heartwood, Genuine Mysore Sandalwood Oil, distilled at our Linden, N. J., plant, is the chosen standard of purest quality for leading Perfumers the world over.

The delightful effect imparted by genuine Mysore Sandalwood Oil cannot be satisfactorily duplicated by natural or synthetic material from any source other than authentic Santalum album linnae.

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Helfrich manufactures under private label every cosmetic product. Below is a list in regular production in our modern, scientific factories under rigid quality control.

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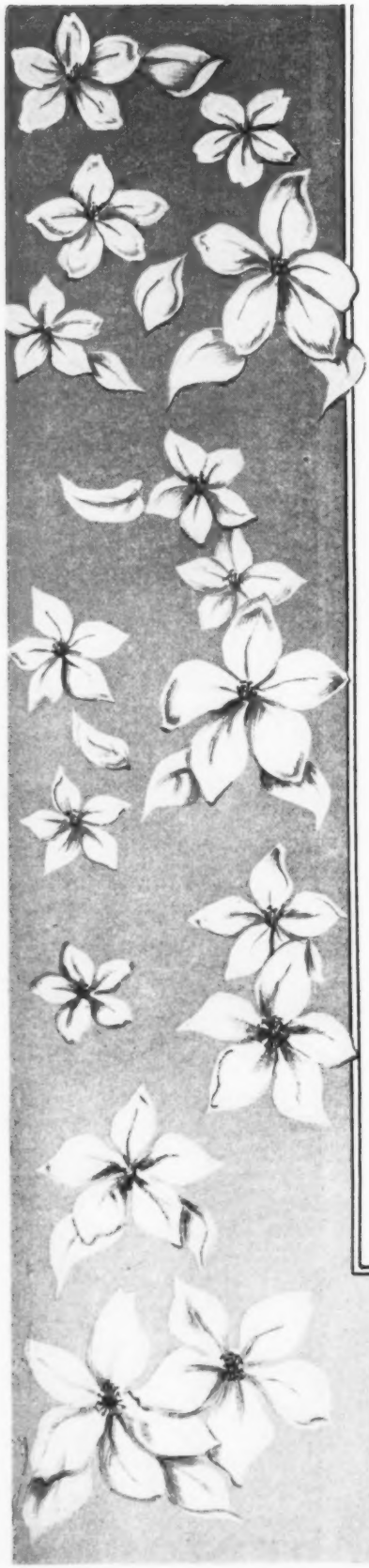

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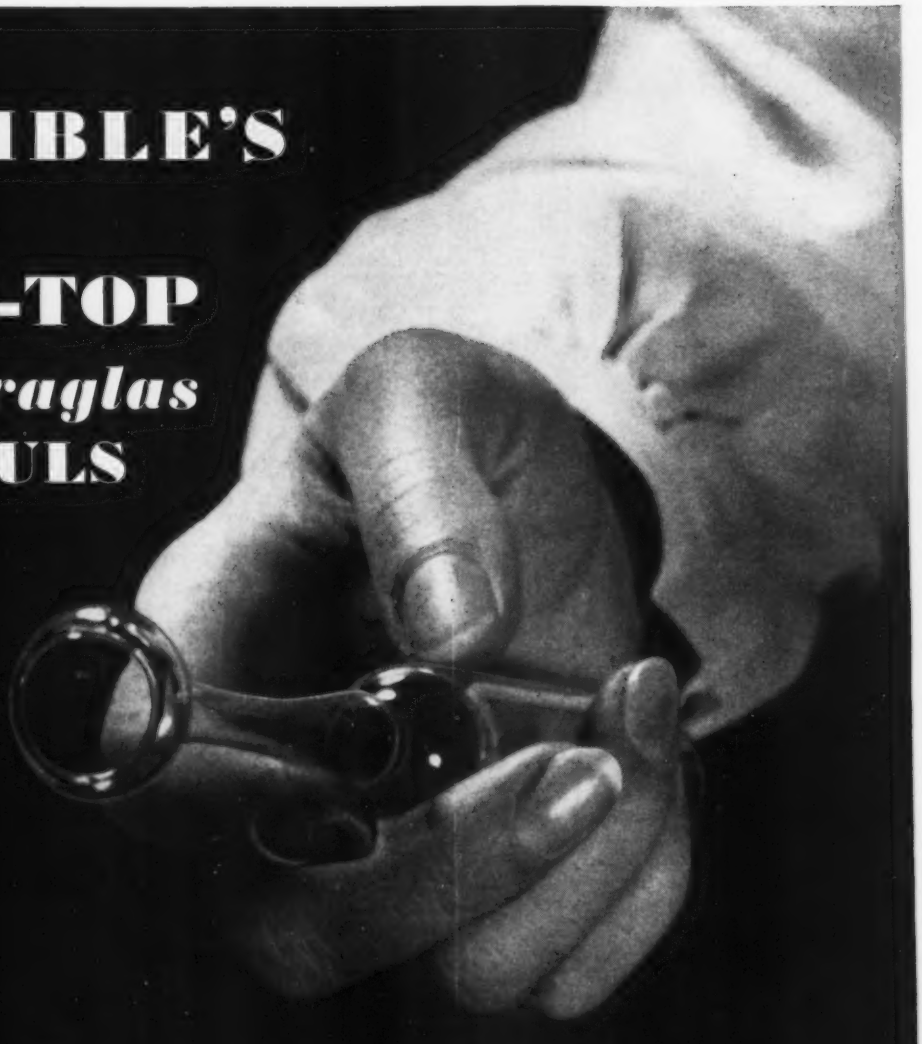

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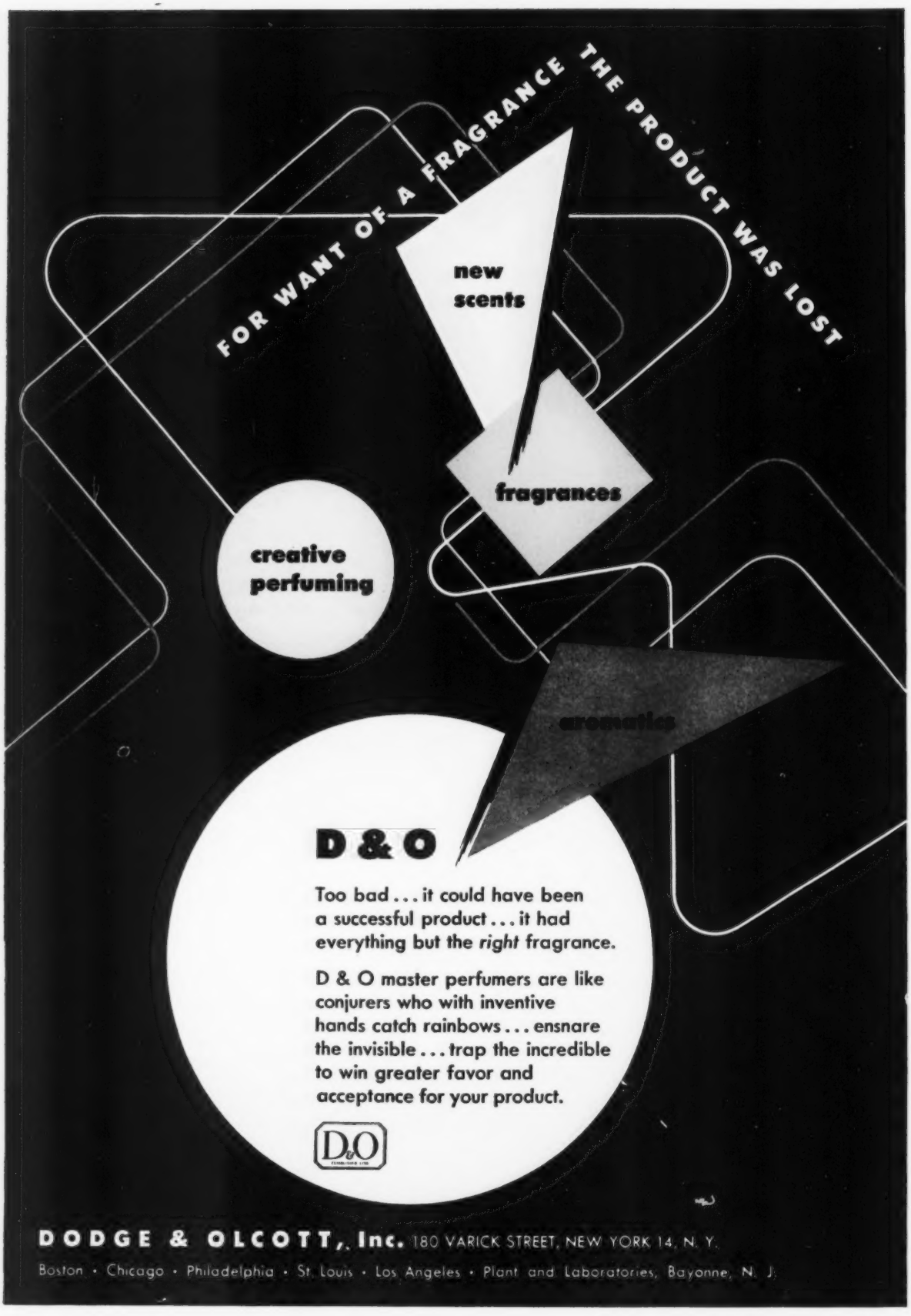
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objectives and perspectives

While we have been manufacturing Private Brand Cosmetics longer than most Companies, our contention is that it is not the age of a company, but the seasoned experience of its members that endows it with dependability.

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Always, we endeavor to incubate and inculcate merits that give a product EDGE . . . Sincerity and craftsmanship are the dual ideals which have foundationed our organization. When we assume the responsibility for manufacturing your product for distribution through broad trade channels . . . our reputation, too, is at stake.

Unlimited service to a limited number of clients has yielded excellent results. We have been most cautious in avoiding rapid expansion, knowing, full well, that mushrooming often produces toadstools.

These, in brief, are the objectives and perspectives to which we tenaciously adhere. And, we harbor the notion that your ship will come in provided you engage . . . the *right* skipper.

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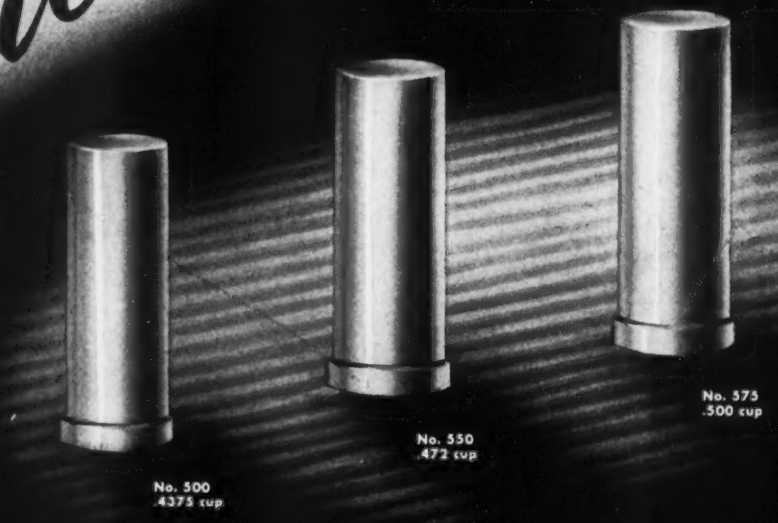

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Atlas ARLACELS, made especially to avoid color intrusion in cosmetic and drug formulations, are lighter in color than general-purpose emulsifiers. They have a clean, pleasant, bland aroma—none of the "chemical" odor so common to most fatty acid esters. As a consequence, the distinctive elegance of your product is permitted to stand out.

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These new and superior emulsifiers, the first to be developed especially for the cosmetic and pharmaceutical industry, are the outcome of painstaking research—the same kind of research that produced the famous Atlas Spans and Tweens. We invite you to write for more information.

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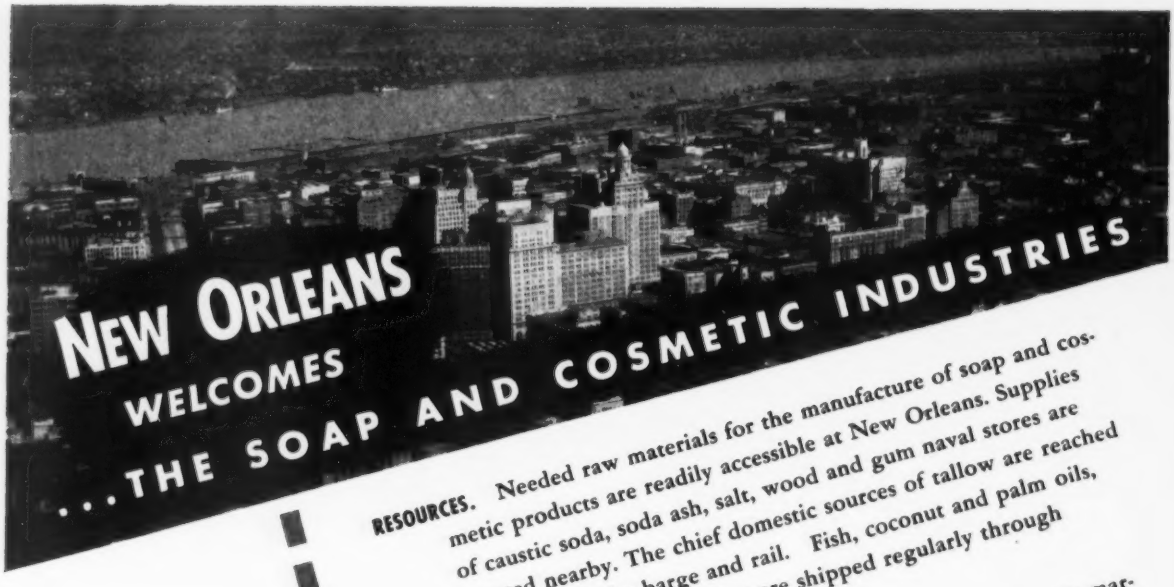

NEW ORLEANS WELCOMES ...THE SOAP AND COSMETIC INDUSTRIES

RESOURCES. Needed raw materials for the manufacture of soap and cosmetic products are readily accessible at New Orleans. Supplies of caustic soda, soda ash, salt, wood and gum naval stores are located nearby. The chief domestic sources of tallow are reached economically by barge and rail. Fish, coconut and palm oils, and Latin American tallow are shipped regularly through New Orleans.

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TRANSPORTATION. New Orleans' coordinated facilities are the finest: modern, sheltered harbor, 97 ship and barge lines, 8 major air lines, 9 trunk line railroads, well-kept highways, a 13,000 mile inland waterway network. Raw materials get into New Orleans; finished products get out—fast, efficiently, economically.

YOU CAN'T MISS!

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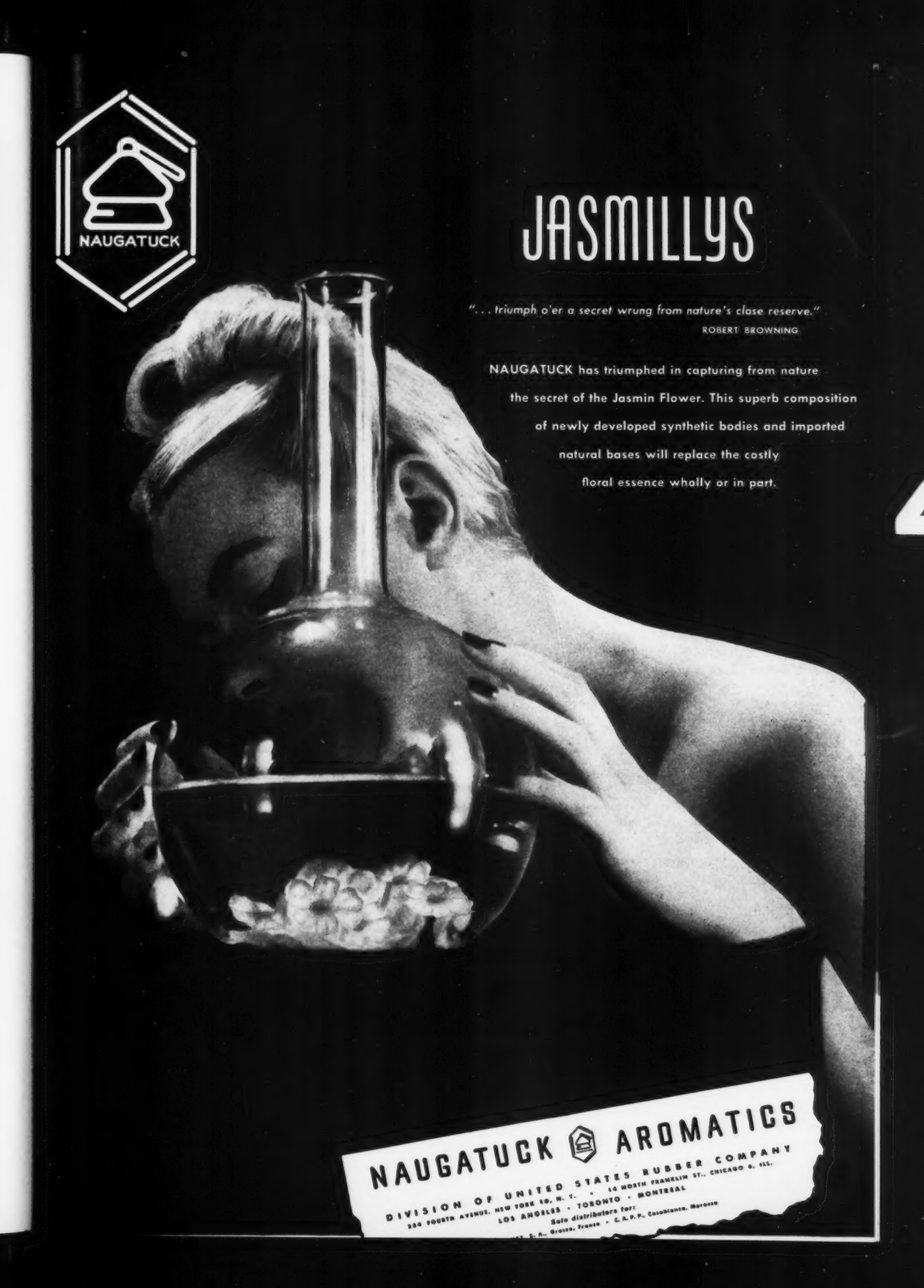
a copy of our recently completed study, "The Opportunity for the Manufacture of Soap and Allied Products in the City of New Orleans". Write: Greater New Orleans, Inc., 1024 Maison Blanche Bldg., New Orleans 16, Louisiana.

GREATER NEW ORLEANS

MARKETS TRANSPORT RESOURCES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"... triumph o'er a secret wrung from nature's close reserve."
ROBERT BROWNING
NAUGATUCK has triumphed in capturing from nature the secret of the Jasmin Flower. This superb composition of newly developed synthetic bodies and imported natural bases will replace the costly floral essence wholly or in part.
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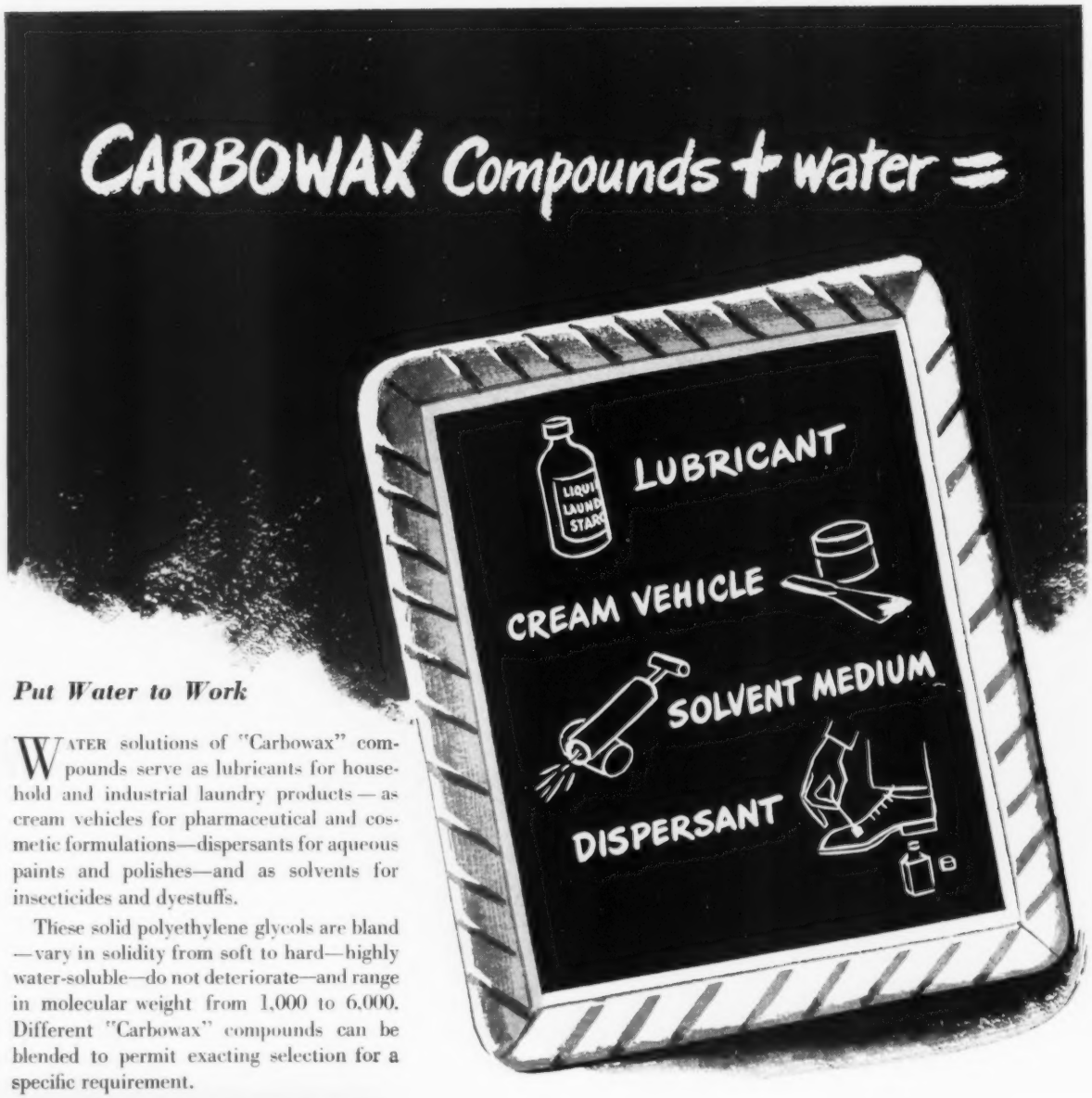
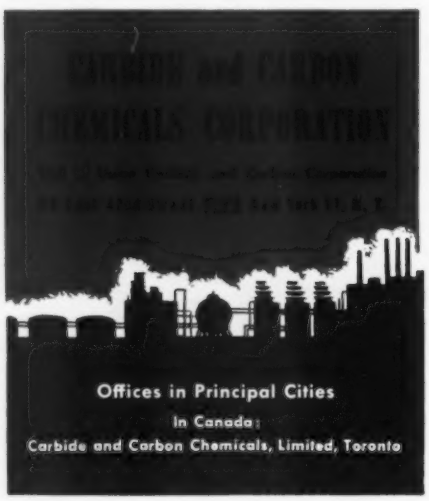


Put Water to Work

WATER solutions of "Carbowax" compounds serve as lubricants for household and industrial laundry products — as cream vehicles for pharmaceutical and cosmetic formulations—dispersants for aqueous paints and polishes—and as solvents for insecticides and dyestuffs.

These solid polyethylene glycols are bland — vary in solidity from soft to hard—highly water-soluble—do not deteriorate—and range in molecular weight from 1,000 to 6,000. Different "Carbowax" compounds can be blended to permit exacting selection for a specific requirement.



"Carbowax" Compounds Successfully Serve As:

Vehicle and Binding Agent for: synthetic detergent cakes — plant hormones—insecticides and herbicides—cosmetic stick perfumes—buffing compounds—crayons—ink remover sticks—polishes—creams.

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Dispersant for: proteins—pigments—starch and oxidized starch.

Our product development group will be glad to assist you in working out formulations and applications for your product or process. A booklet — Form 4772 — which includes suggested formulations and detailed information on the uses of "Carbowax" compounds is available on request. When writing for your copy, please address Department "G-6."

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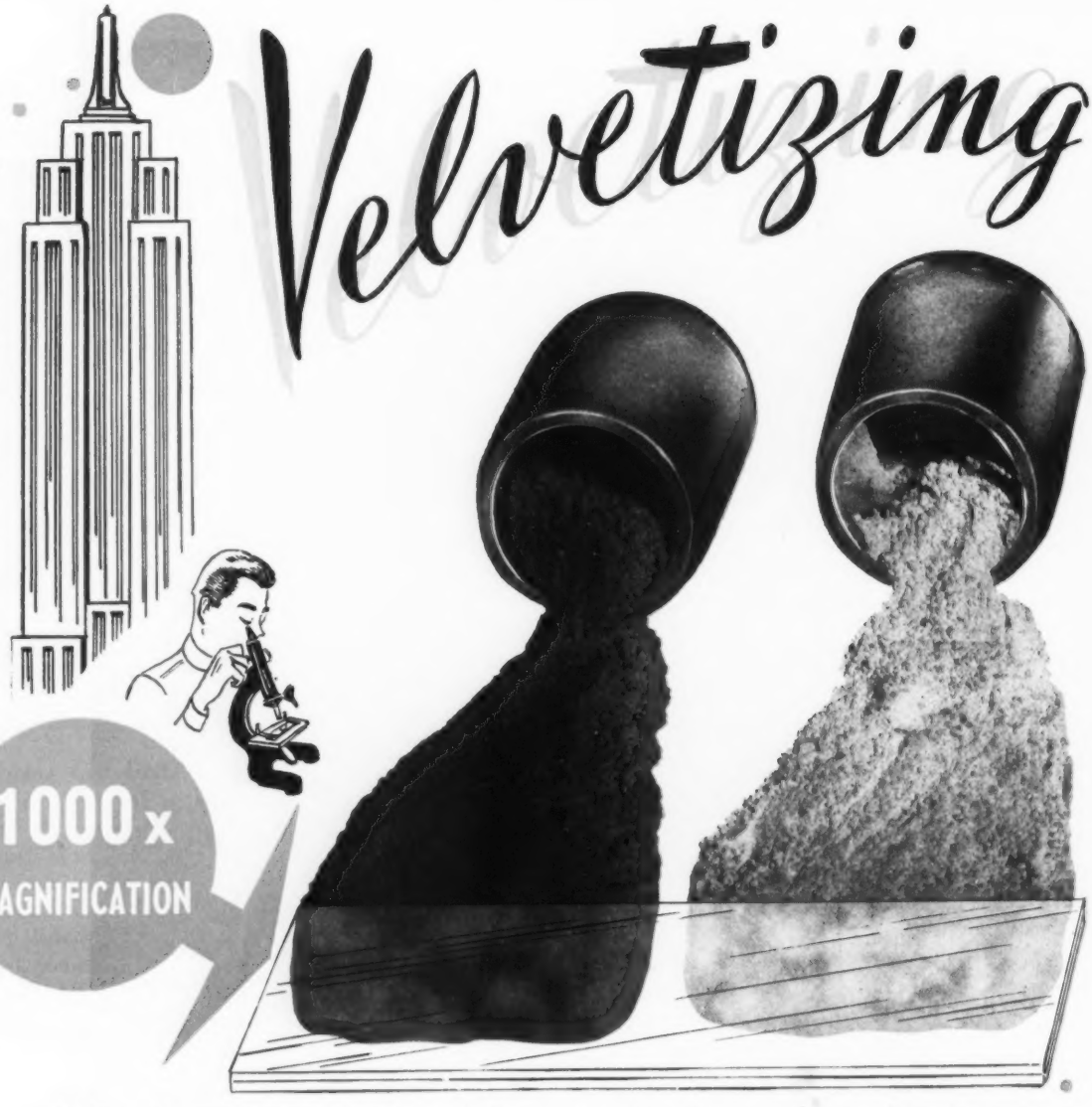

Modern achievement in engineering methods has made possible greater perfection in manufacturing facilities. In our plant, this advance has produced a Rouge and Powder that are the finest on the market due to the exclusive Private Label Process—*VELVETIZING!*

VELVETIZING does what scientists have merely dreamed of doing for ages—

It makes certain our Rouge and Powder cover every peak and valley of the skin.

It makes certain our Rouge and Powder are soft to the touch.

It makes certain our Rouge and Powder have greater spreading power and that definitely desirable *soft matt finish.*

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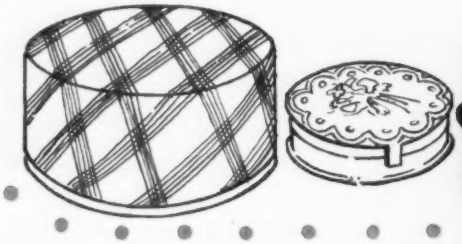
And now for proof! Photomicrographs tell the truth! Those presented here show the texture of our Rouge and Powder magnified 1000 times. Note the softness and density of the microscopic particles — and you'll know Private Label *VELVETIZING* Process truly makes possible this finest Rouge and Powder!

Our factory is at your disposal! Write for samples on your letterhead!



PRIVATE LABEL COSMETIC CO.

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ISCO products make better living possible. Such everyday items as pencil leads, plastics, textiles, linoleum, cigars and cigarettes, and even jelly beans are better because of some ISCO chemical, gum or wax. ISCO research has made possible better carbon paper, better shoe polish, better paints and varnishes—better products in all walks of life. In more than five generations Innis Speiden has provided industry with hundreds of different raw materials to make industry's service to mankind an easier task.

You Can Make *All* Four with ISCO ABSORPTION BASE

Powder Base Creams, All-Purpose Creams, Night Creams, Hair-Conditioning Creams—you can make them all, easily and economically, with ISCO ABSORPTION BASE. A development of the ISCO laboratories, these water-in-oil-type bases will retain up to several times their own weight of water. The finest cosmetic creams today are made the ISCO way. Write or phone today for samples, prices and further information. We shall be glad to help with specific problems involving absorption bases.

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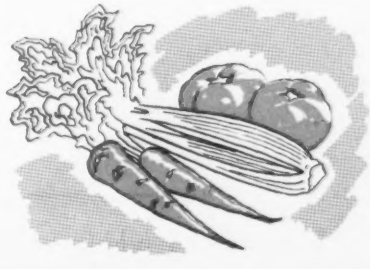

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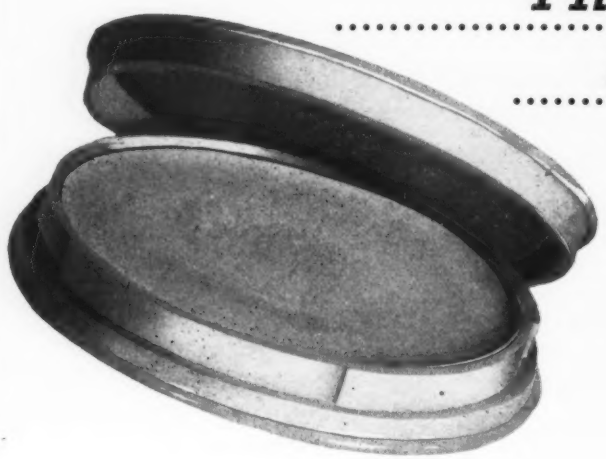

The make-up that goes on, and stays on... *without* water. The one really new addition to the cosmetic field, that has proven an immediate success.

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by Albert Verley & Company

— TURN THE PAGE

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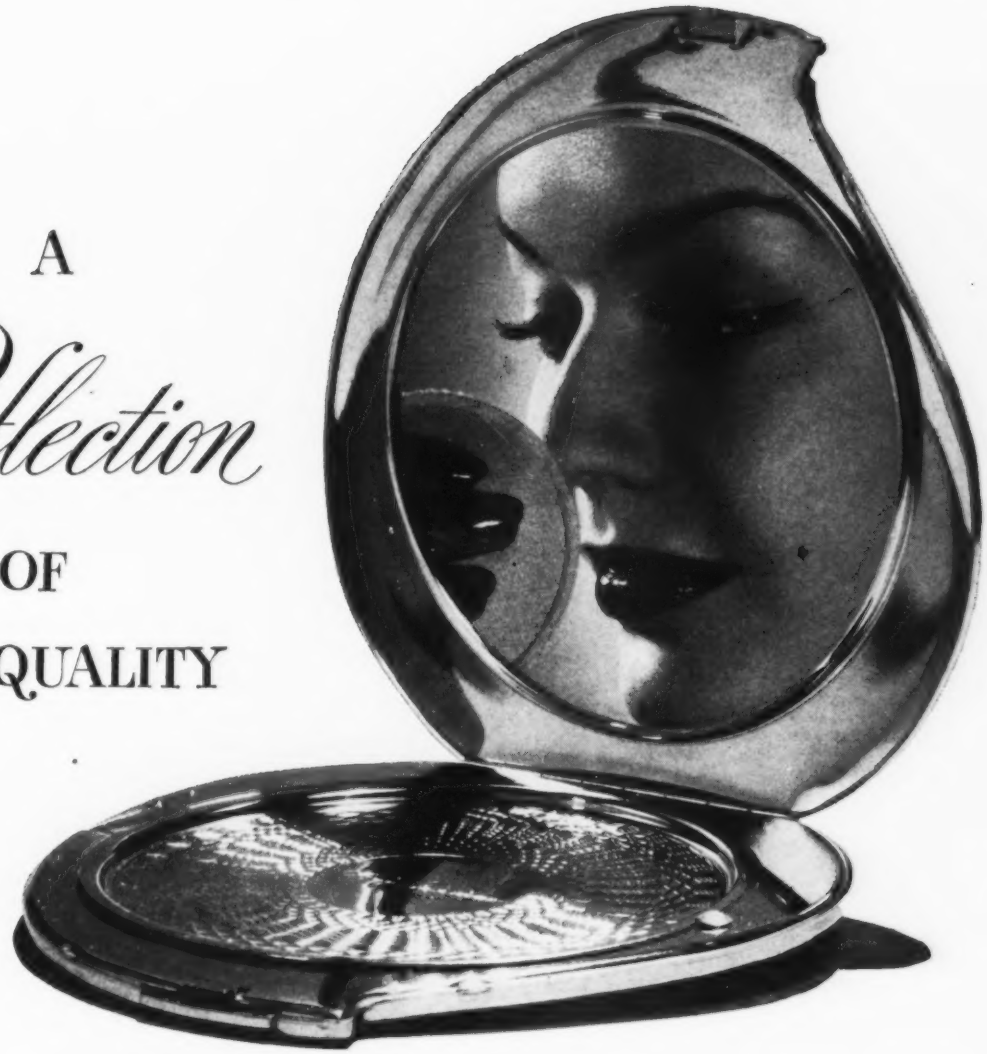

Cosmetics, because of their intimate use, call for the finest and smoothest ingredients. Discriminating women insist upon materials pleasant to the touch, as well as flattering to the appearance.

Cosmetic manufacturers know that this fine quality can be obtained only through the consistent use of raw materials that are uniformly reliable, with a background of quality production.

Merck chemicals for cosmetic manufacture are produced under the same rigid standards of purity and uniformity that make Merck products the choice of physicians and pharmacists throughout the world.

We invite you to consult us regarding your problems and requirements.

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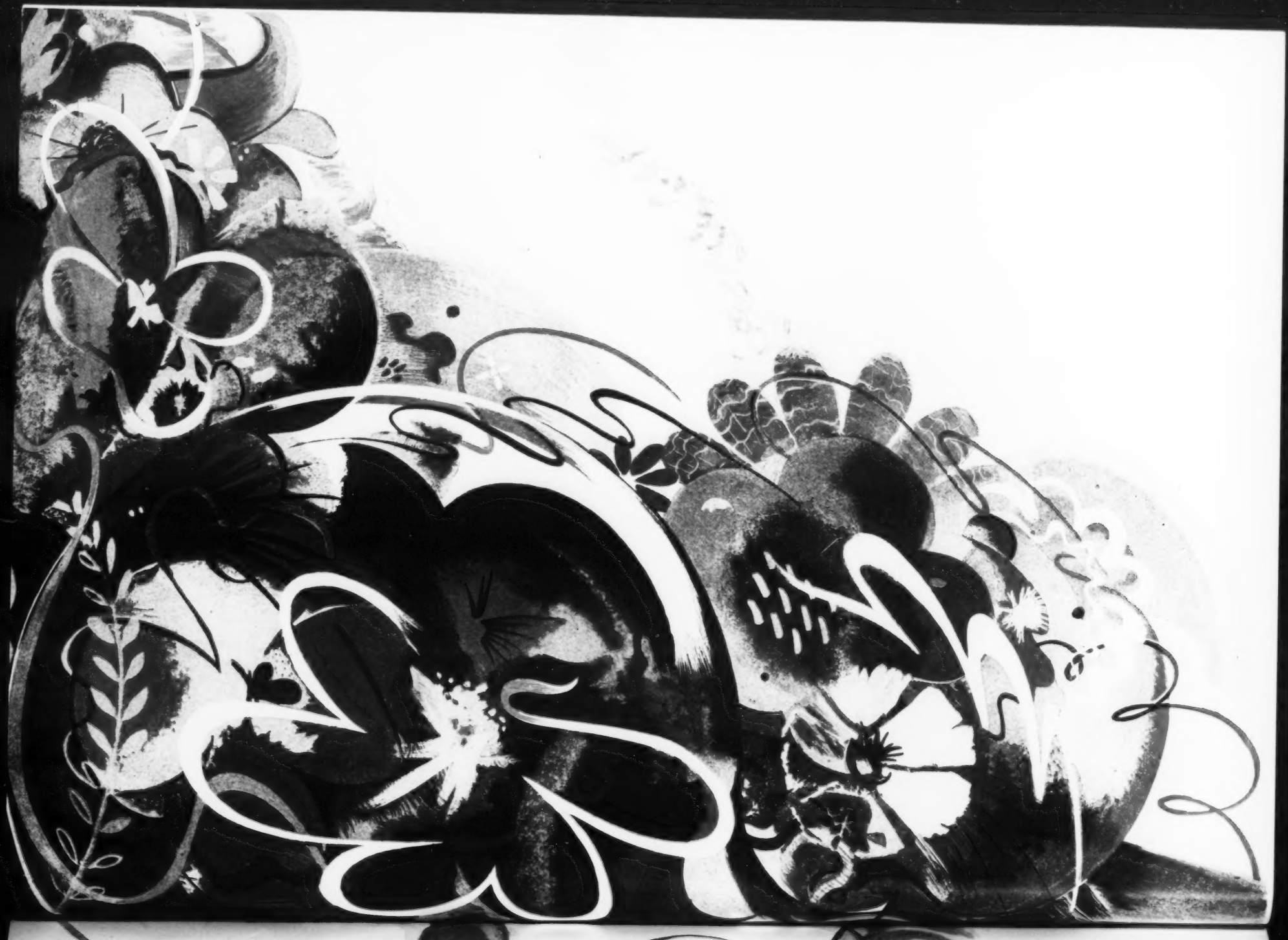

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Hibiscone is of equal interest to the perfumer, the cosmetic technician, and the soap maker, to all of whom the completeness, stability, and the lasting quality of perfume is of prime importance. Its pleasing, persistent, and diffusive odor recalls that of natural Musk and Ambrette Seed. Its breadth of applicability together with other advantages, have placed it in a class by itself. A unique property is its lack of discoloration.

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Belleville 9, New Jersey

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We hand to the perfumery trade a new "building block"—**Jasmelia** is a straight aromatic chemical, untouched and unblended. As its name implies, it has a **Jasmin** odor but one which possesses a remarkable characteristic —namely, the much coveted effect of the waxes of the natural **Jasmin.**

POLAK & SCHWARZ, NEW YORK, CHICAGO

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If your product is in a transparent container and has an uneven distribution of color and body, its display value is greatly harmed. It offers less sales appeal to the discriminating buyer.

IN THE HOME

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Editorial Comment

Trade Practice Rules

Representatives of toilet goods manufacturing firms, distributors, wholesalers and retailers met May 12 and 13 with representatives of the Federal Trade Commission to work out trade practices for the industry that would be equitable, would protect both members of the industry and the public, and would fall within the law as defined by the Clayton Act, as amended by the Robinson-Patman Act.

As had been expected, the use of demonstrators and the payment of "push money" was discussed again and again. The discussion centered around the meaning of the term "proportionally equal."

Previous to the meeting, The Toilet Goods Association had mailed out requests for suggestions, and from these a Committee, which had been set up, was able to furnish the Federal Trade Commission with eleven alternate methods of paying for or furnishing "proportional" services to customers. It was these methods which were discussed.

Even though the preliminary hearing has been concluded, Henry Miller, Director, Trade Practice Conference Division, has invited members of the industry to submit their views or suggestions either in person or in writing. Those who would like to avail themselves of this invitation may reach him through the Federal Trade Commission, Washington, D. C.

The rules which were proposed last month are now being studied. Subsequently, another conference will be called for a second hearing. So far, no date or place for this meeting has been announced, but it is expected that it will be held in Washington, D. C.

Science and Cosmetics

Last month the cosmetics industry became much richer in technical knowledge than it had been before through scientific papers which were presented before the meeting of the Society of Cosmetic Chemists, and the Scientific Section of the Toilet Goods Association. We should all be grateful for this added knowledge.

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Desiderata

by MAISON G. DENAVARRE

M. G. deNavarre at work in his laboratory

HORMONES

If anyone has ever seen the process of making estrogenic hormones from pregnant mares' urine, they will remember the point at which the estrogen concentrate is made—at which point it is a black, tarry mass that stinks like a horse stable plus—the tarry mass being dissolved in a vegetable oil, in preparation for the bioassay.

Those close to the hormone picture, either drug or cosmetic, know that much literature has been written in early days on the tie-up of cancer with injections of estrogens in oil . . . estrogens made by dissolving this black, tarry mass in vegetable oil and diluting to proper strength before ampouling for use on humans.

It has been my belief that much if not most of the cancer reported in the past in particular, was due not to the estrogen, but to the other ingredients of the black, tarry mass. These are known to be complex phenols among others . . . and complex phenols are known to be primary irritants capable of producing cancer.

Oil solutions of estrogens derived by dissolving the black tarry mass in oil should not be sold for use on humans, until it is determined beyond a shadow of a doubt, that the tarry residue in no way predisposes to cancer or other irritation or undesirable reaction. Only crystallized estrogen should be allowed to be used, even though its price is much higher. The F.D.A. should ban the sale of oil solutions of estrogens made from the tarry residue, thereby removing a possible cause of cancer, until manufacturers have studied out this point. Reputable users of estrogens insist on the crystalline type. Let's everyone, toe the line.

Speaking of estrogens, it was a cosmetic field day when Goldziehr presented his address on the use of estrogens in cosmetic creams before the Society of Cosmetic Chemists on May 13th. I wouldn't have missed it.

CETYL ALCOHOL EMULSIFIER

That cetyl alcohol when used in combination with sodium lauryl sulfate is a powerful emulsifying combination is not commonly known. We have tried it in this laboratory and it is amazing how much oil can be emulsified with 3 to 5 per cent cetyl alcohol and only one-tenth to one-twentieth the amount of sodium lauryl sulfate. Lanolin doesn't tend to soften the creams as it does in the case of beeswax cold creams. When beeswax is used with this combination, it tends to give polyphase emulsions. The stuff is really worth experimenting with.

LECITHIN TESTS

Creams made three months ago containing 1 and 2 per cent lecithin. have been in an oven at 110 deg. F. for this length of time, to determine if lecithin affected stability, and if lecithin tended to produce off odors as has so often been said in the past.

It was mentioned in this column about two months ago that lecithin produced an unusual but nice effect on skin . . . that it raised Cain with the ordinary emulsions to which it was added and that new combinations would have to be worked out.

It is now apparent that lecithin, when added to ordinary creams, makes them less stable than creams not containing it. The creams turn darker. BUT NO NITROGENOUS OFF ODORS COULD BE NOTICED UP TO NOW. The odor of the soybean oil present was evidenced, and in one sample the odor of the rose bouquet added had completely vanished. The test will be reported again later, as it is being continued. I for one would like to know if the literature claiming that lecithin would produce nitrogenous compounds with bad odors when used in water containing products, is right or wrong. I know that it works well in soap, for it has been used in soap in Germany for many years, particularly during the war years.

FLAVOR

An unusual flavor problem recently presented itself. The vehicle or carrier for the flavor was inert and tended to prevent the flavor from being released from it. The truth is, the flavor was dead—flat, and it took a lot more flavoring ingredients to get any kind of taste. We then tried to pep it up with a bit of edible acid, and since most acids were not soluble in the vehicle, glacial acetic was used. Even with this, the flavor kicked up tremendously when only traces of acid were used. Then we tried to work in some sweetening. A bit of saccharin made the flavor pop out again.

Flavoring in itself—without sweetening or acid—is oftentimes flat. Occasionally a bit of salt enhances it, as in the case of food. It is a thought

WHY SHOULD *YOU* USE COLLAPSIBLE TUBES?

WHETHER you pack colors in oil or cream shampoo, tooth paste, shaving cream or any one of a host of products, you should join the ever-increasing group of manufacturers using collapsible tubes. WHY? . . You'll find that consumers *prefer tubes!* Painters, for instance, save a lot of time and trouble—measure out exact portions, avoid messy leaks and breakage, by using colors packed in tough, convenient NEW ENGLAND Tubes. Others like their light weight, compact sturdiness, and ease of handling, packing and storing. YOU too will find tubes *the ideal container* . . easy to pack and handle. Their lightness and toughness make them ideal for shipping, cutting costs and eliminating the breakage problem.

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worth remembering in compounding artificial flavors, fruit type in particular.

At last I've seen a sample of grape essence of concord grapes, about a 150 fold. It is being made in Canada, much like apple essence. That haunting but elusive grape aroma is now much closer to duplication than ever before. A similar natural cherry and peach concentrate is available, all made from the real fruit.

NEW COLD WAVE

A sample of a new type, non-thioglycollate, cold wave has just been received. If it lives up to the promises of the supplier, this man has something interesting. According to the supplier, the product has already been tested on quite a few heads of hair, for strength of wave, safety to hair, ease of use among other tests.

WET GRIND OF COLORS

It wouldn't surprise me to see some of the big boys go back to wet grinding of colors for face powder. It is being done for rouge and cake makeup. And the results are far better than dry grinding it seems. You also seem to get more color value per pound of color. The shades appear richer, too.

QUESTIONS AND ANSWERS

649. ANTIPERSPIRANTS, DEODORANTS

Q: *In the December issue of your journal we read an article on antiperspirants and deodorants. We intend to make these products and shall feel obliged if you will let us have some good formulas.*

N. V. H. M.—HOLLAND

A: We refer you to the April issue, 1947, THE AMERICAN PERFUMER, page 365, to an article on aluminum chlorhydrate by Govett & deNavarre. The article describes the value of aluminum chlorhydrate as compared to aluminum chloride and sulfate. At the end of the article are given six formulas using specialty emulsions. In general, the products contain from 15 to 25 per cent of aluminum chlorhydrate with acid stable emulsifier.

650. CREAM SHAMPOO

Q: *Several months ago you stated that sodium salt of sulfated fatty alcohols of cocoanut oil could be used in the manufacture of a cream shampoo. May we ask if you have any data as to how this product is used and any formulations covering it or any other formulation for the manufacture of a cream shampoo that could be packed in a wide-mouth jar and have the viscosity similar to a lather type shaving cream.*

P. J.—PENNA.

A: In the March, 1947, issue of THE AMERICAN PERFUMER, page 269, is an article discussing cream shampoo, using the sulfated fatty alcohols of cocoanut oils which are mentioned by trade names. We suggest that you refer to this article for complete information.

651. DETERGENT PRODUCTS

Q: *We are interested in producing a line of detergent products including: (a) A foamless product to be used in washing machines; (b) A non-irritating product, to be used as soap by people with a sensitive skin; (c) a product to clean painted surfaces, and any other product, detergent of the latest type available to complement the consumption of domestic and laundry concerns.*

G. A. C.—MEXICO

A: To produce a foamless product for use in washing machines is a comparatively simple job because there are quite a few synthetic products that are good detergents but poor foamers. The names of a few of these are sent to you under separate cover. A non-irritating product for use in washing skin of sensitive people can be made from either a sulfonated oil diluted to whatever strength is desired or from some of the alkyl amido condensation products which are diluted to any strength wanted. The names of several of these are sent to you separately. Any of the above products would also be useful for cleaning painted surfaces. We suggest that you subscribe to one or more of the trade journals of the laundry industry such as *Laundry Age*, 9 E. 38th Street, New York 16, N. Y.

652. LANOLIN IN BABY OIL

Q: *We would like you to recommend a cosmetic grade of anhydrous lanolin to use in a baby oil (Mineral Oil, Light.) We notice that the U. S. P. grade developed a characteristic offensive Lanolin odor, especially when the oil is warm. Would you suggest the use of an anti-oxidant and a perfume to correct this. Can you recommend as yet any of the better wetting agents for cream shampoo formulations. We are interested in a cream shampoo that will be reasonably stable and rinse well and give good service in hard water areas.*

F. T. Y.—OHIO

A: We are sending you the names of several suppliers of anhydrous lanolin and suggest that you experiment with each of them to determine which suits your need best. You should request a cosmetic grade possessing the least color and odor. We recommend the inclusion of an anti-oxidant such as N.D.G.A. 0.01 per cent with a like amount of citric acid and a perfume used in the lowest possible concentration that will *blend* with your product. You should approach some of the aromatic houses in this respect. The best all around wetting agents for cream shampoo are the sulfated fatty alcohols and formulas utilizing these and others appear on page 269 of the March issue of THE AMERICAN PERFUMER.

653. GOLD-PLATED GLASS STOPPERS

Q: *Please inform me if gold-plated glass stoppers for alcoholic extracts such as perfumes could affect the composition of such compounds. I know silver will not affect such compositions but I am not sure as to gold-plated glass stoppers.*

H. Y.—INDIANA

A: Gold *plated* stoppers invariably have a thin plate and may contain some copper. Your perfume would be unaffected excepting in so far as either iron or copper would give you trouble. Naturally, solid gold would not do this. Even if the gold plate were pure, you will still have trouble because it is impossible to get an inexpensive impervious plating.

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Attack Made on Excise Tax

THE Twelfth Annual Meeting of the Toilet Goods Association, at the Waldorf-Astoria Hotel, May 14, 15, 16, opened with a discussion of the Cosmetic Trade Practice meeting which had taken place during the preceding two days. Since the purpose of the previous discussions had been that of a meeting of minds on the part of Government and industry on trade practices, no conclusive action was arrived at. As a consequence, the morning session of the T.G.A. was of a general nature.

PAUL H. DOUGLAS—LABOR AND PRICES

Paul H. Douglas, president of the Association, took up the subject of labor and prices in his report. "For the past two years industry as a whole has been urged by the Government to pay higher wages and at the same time keep prices at current levels. Our industry can readily be cited as an almost perfect example of that theory in operation. Since 1941 the labor cost of the toilet goods manufacturers has increased from 75 to 125 per cent.

"During the same period, our selling price to the consumer has remained practically unchanged, particularly the price of commodity items. During the same period our costs of all materials has increased, especially during the past twelve months. We have absorbed our own increased cost of labor, our suppliers' increased cost of labor, the increased freight costs, and in many cases the effect of fixed exchange on the cost of essential materials produced in countries suffering from a high degree of inflation, but our prices to the consumer have remained practically unchanged except on items aggregating but a relatively unimportant percentage of our total volume.

"What has made this possible? One thing—VOLUME. Today we are beginning to see a threat to our volume picture.

"By the continuation of a 20 per cent sales tax on toilet goods the Government is collecting, principally from the women of the United States, approximately $250,000 a day every day in the year, including Sundays, mostly as a result of their purchases of absolute necessities, ranging from baby powder and deodorants to a jar of cream or a box of powder—not luxuries but acknowledged necessities of life recognized by penal institutions, home relief, state and Government agencies.

"The elimination of this 20 per cent sales tax would result in an immediate upsurge in volume, and it would enable us to retain practically the pre-war prices that now exist."

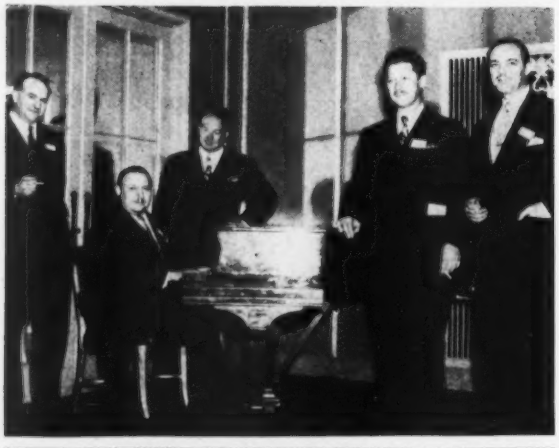
S. L. MAYHAM—EXCISE TAXES

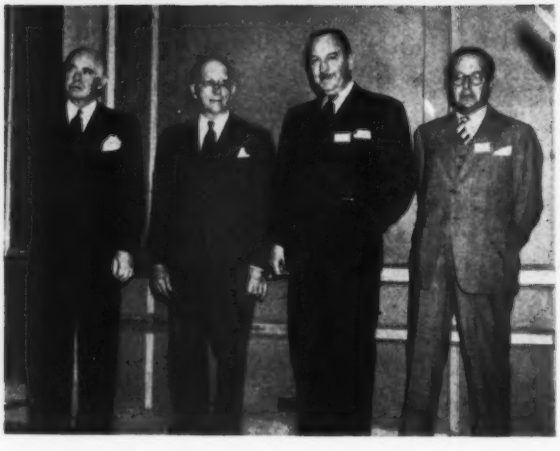
S. L. Mayham, executive vice-president, also spoke on excise taxes during his report on the Association. Excerpts from his talk follow: There is no doubt that at least 95 per cent of the products of the industry are essentials to the health, morale and well-being of the consuming public. To tax such products in peace time at the absurdly high rate of 20 per cent is a disservice to those customers. We believe that the incidence of any consumption tax should be at the point of retail. The public should be aware that it is paying any tax levied upon it.

In speaking of the continued growth of the Association, Mr. Mayham said: "Our membership at the time of the last convention was 356 active and 158 associate members, a total of 514. Today we have 371 active and 167 associate members, a total of 538. While the increase is gratifying, it should be greater. Every member of the industry should enjoy the benefits and privileges of T.G.A. membership. While we represent nearly 90 per cent of the industry in volume of sales, we ought to represent 100 per cent by both volume and number.

"Much has been written on the history of cosmetics and their use in ancient times. The story through the Middle Ages and in more recent times in Europe is well documented. Up until now, however, there has been no authoritative information relative to the products themselves or the development of the industry in America."

During the last two years the Association has had an active and competent committee on historical data under the successive chairmanships of H. P. Willats and Mrs. Frances Hollis. This committee gathered a considerable amount of miscellaneous information but its facilities for analyzing and compiling the data were necessarily limited. Realizing the value of a concerted outline history of





Top: Herbert T. Roden, Daniel Silver, Fred L. Gaudinear, L. M. Scovill and Edward Hemlock gather around Walter Conklin to discuss the outlook which all agree is good

Center: With Alphonse Pillet at the piano Philip Chaleyer, Hilary Herchelroth, William Fairhurst and Henry K. Jarrett stop during a moment of gaiety to have a picture snapped

Bottom: Harold L. Brodrick, S. L. Barnes, E. P. Matthiessen and Arnold L. van Ameringen, all staunch supporters of the association, pause to compare notes on the supply situation which fortunately is brighter than it has been for some years

American work in toilet goods, we finally employed Mr. Gilbert Vail, a well known historical researcher and writer to do further research and compile the history. When it is ready, a copy will be sent to each active and associate member, and a suitable price will be set for additional copies.

One disservice which the glamorizing of perfumes has done to the cosmetic industry is that our legislators and many of the public have received the impression that perfumes and necessary toilet articles are luxury items used mostly by the queens of the stage, the films and of fashion, and that the advertised prices of $20.00, $40.00 and sometimes $60.00 or $75.00 for a small bottle of perfume are representative of the sales of the industry as a whole; according to Hugo Mock, counsel.

I think it is a fair statement to say that so-called luxury items do not represent 5 per cent, and it might be much less, of the total volume of the industry. It is time that our lawmakers in seeking for sources of revenue made a more factual and scientific approach to the problem without penalizing the average consumer. At least 95 per cent of the volume of the industry are not luxuries at all. Our lawmakers should recognize that toilet preparations are used by women in the United States regardless of income or social position and that consonant with the American standard of living they are definitely not luxury items.

The industry is to be congratulated on its record with reference to the Food, Drug and Cosmetic law during 1946. Only ten seizures were made during the year for violation of the Act, six of them because of the use of non-certified colors.

H. D. GOULDEN—INDUSTRY ADVERTISING

H. D. Goulden, director of scientific research and standards, stated: The trend toward selling copy in industry advertising continues. Most of the copy is what we term "claim copy." In spite of the increase in this type of copy, there were fewer cases of exaggerated and objectionable claims. Radio scripts rarely require revision.

Several sales manuals have been reviewed. These manuals have been "further off the reservation" than most of the other copy submitted to the Board of Review.

Since our last convention, T.G.A. standards have been issued for triethanolamine, cetyl alcohol, stearic acid-double pressed, stearic acid-triple pressed, glyceryl monostearate non self-emulsifying, kaolin, oleic acid and castor oil. The number of standards issued by the T.G.A. now stand at 25. T.G.A. standards are available to anyone upon request. The Committee now has under consideration and investigation standards for lanolin, coconut oil, spermaceti and magnesium oxide.

The Research Committee has recommended a critical review of the literature relating to irritation and sensitivity in connection with cosmetic materials. This has been approved by the Board of Directors and the Committee has been requested to work out the details necessary to initiate the program and present them to the Board for ratification.

Mr. Goulden gave particular credit for the program conducted by the Scientific Section to Dr. M. W. Tapley, chairman and L. B. Dobie, vice-chairman.

The Lanham Trade-Mark Act was interpreted for the Association by Walter J. Derenberg, United States Patent Office, and Miss Daphne Robert, assistant counsel. The

Paul H. Douglas

Wm. M. Bristol, Jr.

John A. Ewald

Coca-Cola Co. (Since this subject was thoroughly covered in the March issue of THE AMERICAN PERFUMER, it will not be further discussed here. Ed.)

T. W. Delahanty, associate chief, Chemical and Drug Division, U. S. Department of Commerce, in analyzing the export possibilities for the industry, said: We now have a capacity in the United States for producing toilet preparations which should impel many more firms to seek overseas outlets. On past occasions such outlets have been sales insurance to some concerns, sorely pressed by domestic competition and recessions. But no concern should even consider the venture unless it is planned, financed and operated as seriously as your domestic business. At times exporting may seem to be an opportunity for securing additional profit or for exploitation but the experienced marketer knows that such business can boomerang as well.

To put it another way, developing a market abroad must be approached as an investment and adequate time should be allowed to reach a sound paying basis. And since service should be the foundation upon which every market is built, if prospects seem inviting there should be no hesitancy about establishing oneself more strategically within the economy of particular countries.

It is a truism today that the best markets for all lines of merchandise are those which are the most highly industrialized and soundly progressive.

ELECTION OF OFFICERS

The only change in officers elected to the Toilet Goods Association was that Paul F. Vallee, Roger & Gallet, retired from the post of treasurer to become honorary treasurer. The vacancy was filled by Richard Stern, Ferd. Mulhens, Inc.

Other officers reelected were: Paul H. Douglas, Bourjois, Inc., president; William M. Bristol, Jr., Bristol-Myers Co., vice-president; Norman F. Dahl, Prince Matchabelli, Inc., vice-president; John A. Ewald, Avon-Allied Products, Inc., vice-president; H. P. Willats, Colonial Dames, Inc., vice-president; Joseph Keho, Dorothy Gray, Ltd., secretary; S. L. Mayham, executive vice-president; H. D. Goulden, director of scientific research and standards; Hugo Mock, counsel; Gail B. Selig, associate council and Henry Etsch, assistant secretary.

The Charles S. Welch Memorial Award was presented through Richard H. Grant to Norman F. Dahl, representing Prince Matchabelli, Inc., for the outstanding package of the year, Crown Jewel.

The motion picture "Where Do We Go From Here," presented by *Esquire*, The Magazine for Men, was shown following one of the luncheons.

Top: Martin Schultes, Gilbert and Frank Miles, Harold Hutchins, Eugenia Hill, Walter Klaas, Joseph Gartland, Paul Forsman, Dr. J. J. Wetterhahn, L. J. Van Orden gather for an informal chat

Center: Efficiency in registration personified by Doris Grey, Kay Fitzpatrick, Alyce Foss Olsson, Jean Niket, Dorothy Quick and the old reliable maestros Karl Voss and LeRoy R. Root

Bottom: Convention committee: LeRoy Root, chairman; Karl Voss, treasurer; A. C. Burgund, Sewell H. Corkran, Jr., Charles Fischbeck, Philip E. Haebler, Walter E. Klaas, Michael Lemmermeyer, A. R. Ludlow, Jr., J. W. Thayer, K. W. Tracy, J. Blaine Walker

Abstracts from Papers, T.G.A. Scientific Section

THE PERCUTANEOUS TOXICITY OF THIOGLYCOLATES by John H. Draize, Elsie Alvarez and Marie F. Whitesell, Division of Pharmacology, Food and Drug Administration, Federal Security Agency, Washington 25, D. C.

The cold "permanent-wave" process consists, in part, in a reducing action on the proteins of the hair. A 7 per cent thioglycolic acid solution adjusted to pH 9.0-9.5 (ordinarily with ammonia) is the common waving agent employed.

Salts of thioglycolic acid (sodium, calcium, ammonium, monoethanolamine and triethanolamine) may be absorbed percutaneously by animals to produce systemic poisoning, but the dose level required is higher and the manner of application more rigorous than those specified in directions accompanying waving solutions intended for use by beauticians and in home applications.

Blood examinations in animals treated according to the method of Draize et al, J. Pharm. & Expt. Therap. *82:* 377, 1944, reveal minor fluctuations in hemoglobin levels and volume of red cells even at doses of 4.0 ml./kg./day. This latter dose level elicits a two to threefold increase in total urinary sulfur excretion. Ammonium dithiodiglycolate (an oxidation product and a contaminant, respectively in common wave solutions) are less toxic than ammonium thioglycolate. Similarly, fractions representing various stages in the manufacture of ammonium thioglycolate are less toxic than the active waving ingredients.

These studies support the view that ammonium thioglycolate hair wave solutions are safe for use if the usual directions are carefully followed.

COMPARATIVE STUDIES OF SAMPLES OF PERSPIRATION COLLECTED FROM CLEAN AND UNCLEAN SKINS OF HUMAN SUBJECTS by John A. Killian, Ph.D., and Frank P. Panzarella, M.S.

For these studies, samples of perspiration were collected from the entire bodies of adult males with the exception of their heads and necks. Results of chemical analyses of perspiration obtained from the subjects after a series of daily tub baths with soap and water have been compared with similar analytical data for samples of perspiration collected from the subjects before the series of baths. These comparative analyses of perspiration showed reductions in concentrations in perspiration of extraneous substances which are not products of the secretory or excretory mechanisms of the skin. Coincident with reductions in amounts of these extraneous compounds, samples of perspiration collected from subjects after baths exhibited decreases in their capacities to develop offensive perspiratory odors during storage at body temperature in contact with air. The state of cleanliness of the skin from which samples of perspiration have been collected should be taken into consideration in the interpretation of analytical data for perspiration as indices of excretory functions of skin.

SKIN IRRITATION STUDIES ON SELECTED SUBJECTS by Grace R. Durfee, B.S., Director of Applied Research Laboratories, Inc.

Small groups of ten selected subjects for preliminary and screening tests in skin irritation studies have advantages over large groups of subjects selected at random. Small groups can be used repeatedly, and therefore, offer some degree of standardization.

Each subject in the small group is selected not only for skin type, age and occupation but also for reliability.

Before applying materials to human skin adequate animal tests should have been made to insure against undue irritation or toxic effects from absorption. A routine procedure is followed in preparing the skin, applying the test substance and reading the results.

A group of ten individuals were used for testing approximately fifty materials including many non-ionic surface acting agents. None of the materials illustrated were irritating with the exception of one control substance.

DETERMINATION OF FREEZING EXPANSIONS OF COSMETIC AND PHARMACEUTICAL PREPARATIONS by Albert F. Guiteras and Irving Reich, Foster D. Snell, Inc.

Bursting of bottles or tubes of liquid, jelly, or paste preparations due to freezing during shipment is a common problem. Addition of solutes lowers freezing points, giving protection. Alcohol, glycerin, propylene glycol and inorganic salts are commonly used.

It is frequently not realized that small percentages of solute are of little use. Lowering of freezing points achieved by some common solutes are listed to demonstrate this.

Addition of solute not only causes lower freezing temperature, but leads to freezing over a temperature range rather than at a single temperature. This is discussed in terms of the phase rule. The consequence of this is that protection conferred should be measured not in terms of freezing points but in terms of equilibrium volume of the preparation at any temperature.

A method to measure equilibrium volume at low temperature is described. The dilatometric principle is used. Babcock sulfonation bottles have been found to be very convenient for this purpose. The bottles are partially filled with the material being tested, then filled to mark with petroleum solvent. Temperatures are lowered several degrees at a time and volume readings taken. Sufficient time for equilibrium must be allowed after each temperature reduction, this being especially important in the freezing range. Volumes can then be read again during warming. If true equilibria were reached, they should check volumes read at the same temperatures during cooling. A convenient cooling setup is described.

Application of the technic to practical problems is discussed.

THE TECHNICAL PHASE OF MANAGEMENT IN THE COSMETIC INDUSTRY by Everett G. McDonough, Evans Chemetics, Inc.

Like all industries, the cosmetic industry is becoming more and more appreciative of research and the broad role it plays. Management of a cosmetic organization must define the responsibilities and authorities of the research department. To properly do this, management must include in its executive group the technical director and also must know the many services and contributions that research can render to the sales and production departments: Management should press for these services and improvements of them as well as encourage search for broad knowledge. Unique findings should be protected, and management thus must have knowledge of patents. As more and more cosmetic companies give greater and greater emphasis to their research department, not only the individual organization will benefit, but also the entire cosmetic industry.

DERIVATIVES OF THIOGLYCOLIC ACID by John F. Mulvaney, Ph.D., Evans Research and Development Corp.

The commercial availability of a low-cost thioglycolic acid has awakened interest in the possible utilization of this compound as an intermediate for chemical synthesis. Because of the variety of reactions that thioglycolic acid can undergo, it presents numerous possibilities for the preparation of a host of interesting and potentially useful compounds.

In this paper some of the more important chemical reactions of the thiol group are reviewed and many possibilities for further extended research and development are indicated.

Esters of thioglycolic and ithiodiglycolic acid represent a simple class of derivatives which is now ready for commercial exploitation. All of these esters are new compounds. All of them have very interesting properties and several are unique in some respect. These compounds are now being evaluated for use in a variety of fields of application including cosmetics.

FACTORS AFFECTING THE ZONE-OF-INHIBITION ANTISEPTIC TEST AS IT APPLIES TO TOILET-GOODS PREPARATIONS by Arthur R. Cade, Ph.D., Research Laboratories, Givaudan-Delawanna, Inc.

Although, from the standpoint of government regulatory purposes, the terms antiseptic and germicide are considered identical (based upon the insistence by the regulatory group that for a material to be labeled as an antiseptic it must perform as a germicide) nevertheless, scientifically, a distinction in meaning between these two terms is still definitely maintained. As a result of this there has come into rather wide use today the term bacteriostatic (introduced by Churchman in 1912 to identify those compounds which prevented the growth of some organisms while permitting others to grow readily in their presence) to take the place of, and to cover the actions formerly ascribed to, antiseptic substances. The term antiseptic as now properly used (in the majority of cases) is intermediate in meaning between that for a germicide and a bacteriostatic substance (or germicidal action and bacteriostasis). In other words: A germicide is a substance which *kills* micro-organisms: an antiseptic is a substance which *prevents the growth* of micro-organisms; a bacteriostatic substance *inhibits* the growth.

Thus while a germicide actually must kill, and a bacteriostatic substance need only inhibit or stop the growth, an antiseptic prevents the growth of micro-organisms by either of the other two processes (i.e. kill or inhibit).

Methods for testing this antiseptic action, for the most part are based upon the zone of inhibition test as described in U.S.D.A. Circular 198 and known commonly as the F.D.A. Agar Plate Method. This method is not "Official" however, and so there is not established any definite zone size which can be considered as the minimum, or standard, which all acceptable substances must produce when subjected to a test by this procedure.

Many claim, however, that the efficiency of an antiseptic is in proportion to the zone size it produces, and therefore endeavor to compound their products so as to get the largest zone possible. Likewise, in some instances, compounds have been rejected for use because their zone producing properties have not been considered great enough, and in their place other materials used which produced larger zones.

It is the basic purpose of this paper to indicate by experimental evidence that such assumptions are not necessarily correct and that in many cases anyway, if not all, the reverse is true. Beyond a certain minimum, the larger the zone produced is likely to indicate a poorer, rather than a better, product from a practical application standpoint. The reason for this is that when the zone size is large, that indicates greater diffusion out of the material containing the antiseptic into the surrounding medium. In this manner the effective concentration of medication becomes reduced, and this reduction may be sufficient so as to make the preparation containing it ineffective at the point of application. If not entirely ineffective there, it may be so reduced in strength that the possibility of reinfection at the point of contact, or in the clear zone area, becomes greatly increased. Data are presented to show, on the other hand, that some compounds which produce only small zones of inhibition maintain their efficiency over a considerably longer period of time. This is because of the lesser decrease in concentration than that which the larger zones production brought about, and thus maintain the area of application, and that adjoining it, in a truly antiseptic state for days instead of for hours, as is often the case with the former products.

Factors which affect the zone size, as produced by this test method, are also discussed, and the effect of these variables correlated to show how the same solution can produce a widely different number of zone sizes, depending upon the technique used, and thus showing another phase of the same problem: namely, to indicate that effectiveness of an antiseptic is not in proportion to zone size, nor even closely correlated with it.

Therefore, in the light of these data, and on the basis of the assumptions as presented here by the speaker, it is suggested that a "standard" be set up incorporating these facts so as to allow, for example, a 3 mm. zone as the minimum size to satisfy the antiseptic requirement; and (if it is desired to be more strict or conservative) to include the requirement that, on sub-transferring after 48-hour incubation to another seeded plate, a definite clear zone of over 1 mm. size shall be produced on this second sub-transfer plate.

A QUANTITATIVE METHOD FOR MEASURING POLISH PRODUCED BY DENTIFRICES by M. L. Tainter, C. E. Axford, E. T. Hinkel, Jr., F. C. Nachod and M. Priznar. Sterling-Winthrop Research Institute, Rensselaer, N. Y.

An apparatus and technic for the quantitative determination of the polishing power of dentifrices is described. The apparatus consists of a light source, a lens system, a specimen holder, a phototube with amplifying circuit and meter. A narrow light beam, produced by the optical system, is directed on the tooth and the amount of reflected light is measured. The tooth acts as a mirror to reflect light on the phototube, the amount of light so reflected increasing with the degree of polish. This method affords a convenient means for the evaluation of dentifrices with respect to polishing power. The results obtained may be expressed in terms of either absolute or relative figures.

THE DEVELOPMENT OF ORGANIC CHEMICALS FOR THE COSMETIC INDUSTRY by H. E. Wassell and C. P. McClelland, Carbide and Carbon Chemicals Corp.

The steps necessary to develop an organic chemical for the cosmetic industry from the laboratory stage to a commercial product are outlined with the aid of specific example. Evaluation of such a product takes place along several parallel lines, proceeding a step at a time. The synthesis and preliminary properties are followed by determination of pertinent compatibilities, solubilities, physical properties and a brief survey of potential usefulness in the cosmetic field. Assuming that the compound looks promising at this stage and that each subsequent step is successfully passed, the study proceeds to the development of a suitable production process and thence to physiological testing and trial in specific products. Samples are submitted for customer tests followed by publication of technical literature on the product. Additionally, both new and established chemicals are utilized to solve specific customer problems and adapted to use in new types of consumer products that are introduced by the cosmetic chemist. As a result, new information and compounds based on a sound scheme of testing in the laboratory, are constantly made available as tools for the development of new cosmetic products and processes.

SOME STUDIES IN THE CORROSION OF COLLAPSIBLE TUBES by M. Schor and W. W. Sweet, Research & Development Laboratories—Colgate-Palmolive-Peet Co.

Measurement of electro-potential differences and current flow in experimental cells between electrodes of tube metals, probable metallic surface contamination and calomel half-cells have been employed to estimate the corrosive effects or deterioration of product which may be encountered in certain creams, if packaged in collapsible tubes. This technique has also been applied to quickly determine the optimum concentrations of certain materials and formulations which can have corrosion-inhibiting properties or, the reverse, in possibly promoting corrosion of tubes or damage to the product in contact with the tube material under commercial usage conditions. Particular reference has been made to aluminum collapsible tubes and the solution of some difficulties encountered in their use, by means of the above technique.

Ernest Beaux. Perfumer

Following a visit of several months' duration in the United States, Ernest Beaux, technical director of the Societe des Parfums Chanel of Paris, has returned to France. M. Beaux, one of the best-known perfumers in France today, and creator of Chanel No. 5, recently published brief memories of his career in *Industrie de la Parfumerie*. Some excerpts are presented below.

Up to the time of the industrial production of vanillin, heliotropin, coumarin, Musk Baur and others, the perfume formulæ were very simple, and would seem to the contemporary perfumer, to be rather naive and lacking in variation.

In 1902, by the use of de Laire's ionone, Roger et Gallet had a great success with Vers-Violetta. In 1903, we had Iralia, and in 1904 the hydroxy-citronellal of Haarmann and Reimer, as well as Cyclosia and Laurine; and from that time the perfumer could create a lily and a muguet note of beauty.

In 1928, Exaltone, civetone and later Exaltolide, creation of Ruzicka, aided in the refinement of the highly sought animal note. The Cetone Alpha of Givaudan, the Vetyrisia of Naef, and then several products of Synarome, all gave us new directions, the first toward a woody character, the latter an animal-like character.

Evidently this was not the end. For instance, the aldehydes, known for a long time, were not fully utilized until 1920.

I have been asked several questions concerning the creation of Chanel No. 5, and I should like to reply. When did I create this perfume? Precisely in 1920, on my return from the war. I had been in the campaign in the northern regions of Europe, beyond the Arctic Circle, at the time of the mid-night sun, when the lakes and rivers exhale a perfume of extreme freshness. I retained this note in my mind and succeeded in creating it, not without difficulty, for the first aldehydes that I could obtain were unstable and were produced quite irregularly.

And why the name? Mlle. Chanel, who had a well-known fashion house, had asked me for some perfumes for her dress firm. I came to her with my creations, in two series: 1 to 5 and 20 to 24. Of these, she chose a few, one of which had the number 5 on it, and when I asked her what name she would give it, she replied: "I am presenting my collection of dresses on the fifth day of May, which is the fifth month of the year, so that we will leave the number 5 as the name for good luck."

The article "Aluminum Chlorhydrate, New Antiperspirant Ingredient" by Thomas Govett and Maison G. deNavarre, in the April 1947 issue of THE AMERICAN PERFUMER, erroneously referred to the Atlas Powder Co. as a supplier of aluminum chlorhydrate complex. This compound is obtainable from the Schofield Donald Co., Newark, N. J. (Since the publication of this article, the firm name has been changed to Reheis Co., Inc.)

Abstracts from S.C.C. Meeting

THE high spot of the Spring meeting of the Society of Cosmetic Chemists, which was held May 13, at the Biltmore Hotel, New York, was the excellent quality of the papers presented.

Abstracts of these papers are presented below, with the exception of "The Dermatologist Looks at the Hair Problem," which, unfortunately, did not reach us in time for publication.

THE COSMETIC USE OF HORMONES by M. A. Goldzieher.

Hormones are active substances produced by the glands of internal secretion. The chemical character of these substances, as secreted by the glands, is not known. The substances extracted from organs or body fluids, as for instance, thyroxine or epinephrine, are only active fractions of the actual hormone. The same applies to such synthetically available products as testosterone or progesterone.

It is the task of the hormones to serve the adaptation of the body to unfavorable environmental conditions. Hormone deficiencies are noticeable often by undesirable changes of the skin, for instance, roughness and scaling in thyroid deficiency or excessive pigmentation in adrenal cortical or pituitary deficiencies. Correction of these changes, even for cosmetic purposes, is a strictly medicinal task.

Estrogen is the one hormone singularly fitted for cosmetic administration. It is absorbed if applied topically in a suitable ointment base. Estrogenic ointment can be used medicinally for systemic purposes, in the place of injections or oral medication. The female sex hormone is needed not only for the function and maintenance of the genital organs and secondary sex characteristics of women, but it plays a role in the metabolism of most tissues of the body. The skin is particularly in need of estrogenic stimulation. This is demonstrated by the atrophy of the skin in the castrate and menopausal woman. Atrophy of the epidermis and elastic fibrils of the cutis is associated with decreased vascularization. On administration of estrogen, the appearance of the skin reverts to normal. The changes include regeneration of the epithelium and elastic fibrils, better vascularization and turgor of the cutis. Far better results are obtained by topical administration than by parenteral or oral medication because topically administered estrogen acts directly on the tissues whereas ingested or injected estrogens are carried in the bloodstream to the skin in high dilution and after depletion through physiological forces.

Not only in the skin of castrates or menopausal women is there need for estrogen. Unsatisfied demands of the skin for estrogens are well conceivable in spite of actively functioning ovaries. The avidity or affinity for hormones circulating in the blood is not the same for all tissues. The organ or tissue, the affinity of which is low, does not partake to the same degree in the hormone supply as the organ with "high priority" such as the genitals or breasts. The needed amount and concentration can be obtained only by topical administration.

FLUORINE AND DENTAL CARIES by T. H. Rider, Technical Director, Pepsodent Division, Lever Bros. Co.

An extensive review of the field of fluoride effect upon dental caries (decay) has been digested into a summation of the more pertinent evidence. This evidence shows that fluorine has unquestioned physiological effects when consumed during tooth-formative periods, optimum quantities apparently increasing the resistance of the teeth to caries, while larger quantities produce tooth mottling.

Topical application also has some recognized effects and can reduce caries under optimum conditions of use. Topical application, however, has greater limitations.

The probable mechanism of fluoride action lies in its ability to combine with the tooth structure making the tooth less susceptible to avoid attack.

The use of fluorides to reduce caries is not without some criticism and some potential dangers which cannot, today, be completely evaluated.

Numerous methods have been proposed, or tried, to use fluoride for the prevention of caries. These include addition of fluoride to drinking water, feeding of fluoride tablets, clinical application of strong fluoride solutions to the teeth and incorporation of fluorides in a dentifrice. No single method has been fully established as safe and effective and much more information is needed before it would be wise to incorporate fluoride into a product for unsupervised lay use.

Executive officers M. G. deNavarre, director; Raymond E. Reed, vice president; Dr. Emil G. Klarmann, president; Emery A. Emerson, secretary-treasurer, and Dr. Dan Dahle

CHEMISTRY in PERMANENT WAVING — PAST, PRESENT AND FUTURE by Marcel J. Suter.

The art of waving hair is not new. Records indicate that as far as the fourth or fifth century B. C., Egyptian women used various methods to produce curl in their hair.

In modern civilization, before World War I, most hair waving was done by the marcel iron. A popular alternative was the use of special wigs which were made up by artists for the ladies of those days, who wore them over their straight hair to suit various moods and occasions.

Just after the turn of the century, primarily three persons—each working separately—began to develop what is today called "permanent waving." They were: Charles Nessler, E. Frederics and Eugene F. Suter. They perfected electrical heaters which baked the hair, after it had been wound on a cylindrical rod with borax pads. After the baking process, the borax pads at times had to be chiseled off with a hammer. At that time, also, the hair was left in the condition in which it was found after the curlers were removed; there was no such thing as hair styling and setting.

Early progress and customer acceptance did not grow until after 1921. At that time Eugene Suter developed a new pad, using an ammonia solution with gums and rosins for the first time.

In 1927, Mr. Meyer of Germany, developed what is now the croquignole system of permanent waving, which today, in the United States at least, represents 99 per cent of the type of waving done.

In 1930 and thereafter, heat, which before then had been applied only by machines, was also applied by chemical heating pads; and, by the inception of World War II, what is commonly known as the cold wave came into existence—the latter method dispensed with heat entirely and substituted the use of the ammonium salt of thioglycollate acid. At the present time, these three principles of permanent waving are in use in about the same percentage.

Great secrecy prevails as to what will develop in the future, although it is known that most manufacturers are working on improvements in cold waving, and also on the application of electronic radiation and heat to accomplish the permanent waving of hair. There is also a current contest being waged between proponents of beauty shop permanent waving and the manufacturers of products for home permanent waving; and it is the outcome of this contest which will, to a large degree, determine the type of permanent waving that will be done in the beauty shops.

THE PHARMACOLOGY OF CHEMICAL IRRITATION by Lloyd W. Hazleton, Research Consultant.

In recent years the drug and cosmetic industries have used the terms "Irritant" and "Irritation" with ever increasing frequency and confusion. Any attempt to assist in the clarification of this situation must start with the fundamental consideration that irritation is a phenomenon which was observed and studied by the ancients who described its classic symptoms with such clarity that we moderns have little to add except some of the mechanisms involved.

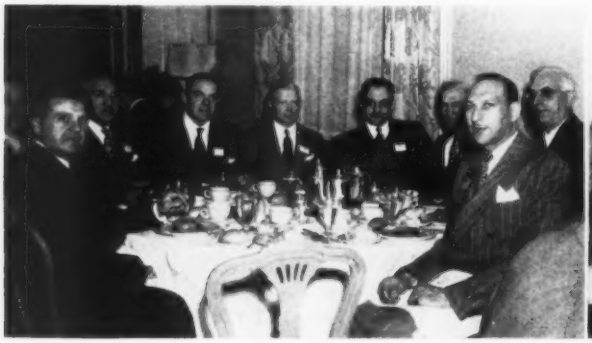
The objective of this discussion is to review some of these mechanisms and their chemical bases and to acquaint the chemist with some of the pharmacological methods used to measure and evaluate chemical irritation. In order to keep the discussion within practical limits of time and scope it is advisable to omit such kindred subjects as dermatitis, sensitization and carcinogenesis which in themselves merit a serious consideration.

In modern terminology, irritation has come to mean an induced condition comparable to inflammation, although this is not its more strict meaning. The cardinal symptoms of inflammation or irritation are heat, redness, swelling and pain, and it is these symptoms upon which most of the measurements are based.

Sympathetic cooperation between chemist and pharmacologist can avoid many of the causes of chemical irritation during the process of product development, but only experimental testing can determine the final success of this teamwork.

The choice of suitable tests depends upon the character and use of the product. Among the available tests are those involving the measurement of irritation by the degree of redness or swelling produced by application of the product to the skin or eyes of experimental animals. Others depend upon fixation of dyes at points of injury and the effect on ciliated mucous membrane.

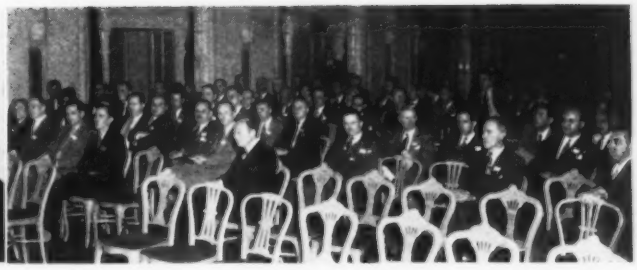
Proper selection and application of the tests, followed by careful evaluation and interpretation will go a long way toward eliminating the hazards of unexpected chemical irritation.



Dr. S. A. Karas, Paul Thomasset, Abraham Minton, William Peacock, Dr. Albert B. Pacini, Harland Wright, Henry Eickmeyer, Franz Bogner and Dr. A. T. Frascati at lunch

Ralph Stevenson, James Hall, George G. Kolar, Paul G. I. Laufer, Robert A. Kramer, Julius Schmid and Pierre Bouillette pause for an informal chat after luncheon

T. H. Binaski, James Middleton, Harry Speel, Dr. Dan Dahle, Dr. E. G. Klarmann, M. G. deNavarre, Eric Eichwald, Fred Schiller and Willim Swinda discuss the papers which had been read in the morning



Members gathering in the convention room after the luncheon for a busy afternoon session. The snapshot was taken less than five minutes after President Klarmann called the meeting and in another five minutes every chair was occupied

PERMANENT WAVING OF HUMAN HAIR: THE COLD PROCESS by Raymond E. Reed, M. DenBeste, Fred L. Humoller, Raymond Laboratories, Inc.

Current widespread interest in the toxicological properties of chemical preparations used to develop permanent waves in human hair has exposed the dearth of scientific information on permanent waving processes in general. In the so-called cold permanent waving process the hair is treated with an alkaline reducing agent which effectively splits the disulfide linkages in the keratin structure. Because the hair fibers are under strain, i.e., wrapped around a rod of small diameter, the splitting of the disulfide linkages allows a reorientation of the polypeptide chains. When this reorientation has allowed the development of a suitable wave undulation, the reduced hair is treated with an oxidizing agent in order to make the waved state permanent.

Natural variations in human hair fibers, both physical and chemical, are discussed and their effect on the permanent waving process is described. Coarse hair fibers, because of their heavy cuticle and smaller surface area per unit mass, are waved with much greater difficulty than fine fibers. This is true despite the fact that coarse fibers show a greater differential extension when wrapped around a rod of small diameter than fine fibers.

Patch test studies have been carried out on a group of human volunteers. Some of these individuals during the course of their work have been exposed to thioglycollates daily for a long time, whereas others have never been in contact with this compound before. The results show that a properly formulated cold wave lotion neither sensitizes nor does it produce primary irritation under the conditions of this test. Using rabbits as test animals, it was found that daily percutaneous applications of 100 ml. of commercial cold wave lotions per 50 kg. body weight produced no apparent symptoms of systemic intoxications.

STUDIES ON THE PERMEABILITY OF THE SKIN OF THE RAT AND RABBIT TO MERCURY by Edwin P. Laug, Food and Drug Administration.

A new method for determining penetration of mercury through the skin has been worked out. This method depends on the principle that the quantity of mercury which accumulates in the kidney during a 24-hour cutaneous exposure to mercury is a measure of the penetration of this metal through the skin. The results of a study of a number of factors concerned in cutaneous penetration of mercury are as follows:

1. Covering the site of the skin inunction increases penetration nearly four-fold.
2. Location of the inunction site appears to have no effect on penetration.
3. Penetration through the skin of the rat and rabbit is approximately equal.
4. "Clean inunction" reduces penetration.
5. Skin conditioning has no marked effect on penetration.
6. Adjustments of the size of the exposure area are not critical for penetration.
7. Sex, litter, and weight have no significant influence on penetration.
8. The vehicle has the greatest influence on penetration, the compound of mercury less, and the concentration of mercury least.
9. Reduction in the particle size of calomel increases penetration.
10. "Stiffening" of an ointment tends to reduce penetration.
11. The effectiveness of wetting agents in increasing penetration is dependent on the type of vehicle.
12. There is evidence to show that the ageing of certain calomel ointments, notably those containing lard, increases penetration.

Essential Oil Industry, French Morocco

The essential oil industry in French Morocco existed in a small way before World War II and was further developed during the war.

An abundance of raw materials exist in French Morocco, inasmuch as climatic conditions foster the growth of a wide variety of plants and flowers. The only essential oils actually extracted from flowers are attar of roses and geranium. Citrus fruits provide lemon and orange oils, the latter being used widely by the local inhabitants. From the forests of the Atlas mountains come cedar-wood oil, turpentine, juniper oil, myrtle oil, and others. Among the plants grown in the coastal areas are lavender, various mints, rosemary and sage; all of which yield essential oils.

Casablanca and Mogador are the two towns where most of the essential oil firms are located. Establishments generally have no up-to-date machinery or packaging equipment, but an effort has been made since the end of the war to develop existing facilities, and some firms have sought local capital to purchase imported machinery and even to equip research laboratories.

Packaging Portfolio

COTY

COTY: Coty's "Le Vertige" perfume is bottled in a handsomely cut flacon nestled in pink quilted satin. The colorful box is decorated with cupids and 18th century courtiers.

REVLON: Fashion Plate, Revlon's cream wafer make-up, is encased in a rose-ivory "plate" rimmed in ruby-red lucite. The new make-up is applied without the use of water.

JACQUELINE COCHRAN: A new lotion deodorant is presented by Jacqueline Cochran. The mild lotion with a flower-fresh fragrance is packaged with a soft sponge applicator. The white capped bottle comes in a pale blue box, imprinted in royal blue.

REVLON

JACQUELINE COCHRAN

RALLET: Rallet No. 1 toilet water has reappeared in the diamond cut fluted bottle with the "shaker" top. The new gold-plated bottle cap follows the design of the bottle. The box is a rose-gold one with side strip and lettering in violet, pink and grey.

RALLET

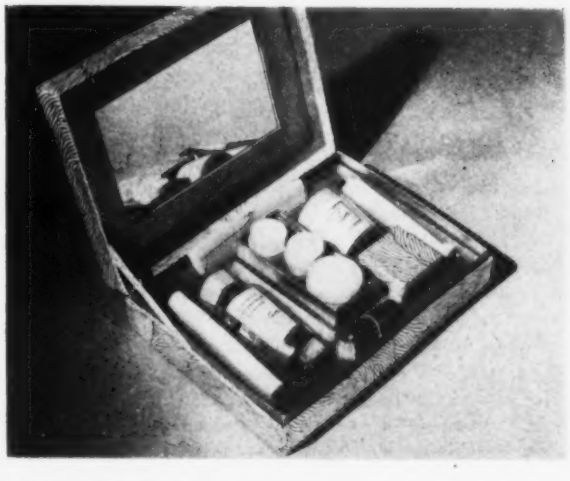
JOHN HUDSON MOORE: Sportsman Sun Tan Oil comes in a smart rectangular crystal bottle, decorated in seafaring style with a ship's wheel. The oil is said to be practically greaseless, one which will not stain and will act as an effective insect repellent.

JOHN HUDSON MOORE

MARIE EARLE: A compact make-up box contains a complete assortment of Marie Earle's facial and make-up products. The "Career Kit" is an attractive chartreuse and gold box, with a mirror set into the top.

DERMETICS: Dermetics presents Mist, Charm of the Redwoods mouth deodorant in a newly designed package. The attractive new box has a solid background of silver with an overlaid "misty" effect in white and soft green. The lettering is black and green.

MARIE EARLE



DERMETICS

Summer colognes due for outstanding sales . . . Darker colors in lipsticks . . . Skin builders lead treatment lines

JEAN MOWAT

COSMETIC Trends IN THE Mid-West

WHEN reporters take a roving vacation some interesting facts are up-turned from stones *not* moss-covered. Down the East Coast into the Carolinas where Spring came two months ago, hot weather—equal to July in the Northern cities—is the daily fare and will continue on through September. Women there complain that no lipstick will remain in place. It smears, it runs and is generally pretty messy.

"What makers of lipsticks don't seem to understand," said a buyer of one of the largest stores in that area, "is that our hot weather is not a matter of six or eight weeks—as in the North—but often that many months. All buyers of cosmetics throughout this area want a lipstick that will give customer satisfaction. So far we have not been able to obtain it.

"Is there any reason why lipsticks cannot be made for the hot weather? Even in the North I find they get pretty soft in a hot spell, take that same weather and have it last for six months and you'll find, as we have, that women will constantly complain about the sticks that smear, that rub off on clothes, that stick to everything and often are so soft one cannot apply them," said this buyer.

This roving reporter found this fact to be so. Lipsticks and cream rouges satisfactory in the North became too soft and sticky for even a decent-appearing application, with or without a brush. Nowhere is there as much rouge worn on lips as in the Charleston area, for it is a port city of much importance, a tourist center and no woman, colored or white appears minus a goodly application of lipstick.

"We want dark, luscious shades in our lipsticks and matching nail polish," said another buyer. "Only occasionally do we have a tint that is satisfactory for use in this area where one tans early. Purple tones are out. Bright red is liked somewhat but this must be a pure color, without a hint of blue or purple.

"I realize it is difficult for a New York maker to understand this and to make a shade of several degrees difference to suit the rich dark tans achieved in this area. But I believe that most women would like the shade, even in the North, if it were stressed as a tone for sun-tanned skins. As apparel designers have found it advantageous to study styles in this area we hope that some of the makers of finer cosmetics will decide to visit us and compare notes on what is really needed for smart lipstick wear in a hot climate." he said.

NATIONALLY FEATURED LINES IMPORTANT

The farther one is from a great Northern city, which often dictates styles, the more one is forced to realize the importance of national advertising. This is the basic guide which women follow from Miami to Washington. Cities throughout this coast region are not the teeming metropolitan centers as in the North where St. Louis can set its own styles and Kansas City do it for that area as does Des Moines for its section and the Twin Cities have no competition for the Northwest area. Chicago has its own ideas about styles and follows through on these, even as New York and San Francisco do.

But in the smaller, yet important, cities, women depend upon nationally advertised brands as a guide to smart cosmetic buying. Kerrison's, Charleston, is one of the leaders that carry a line of 11 nationally featured lines and do a big mail order business for a 100-mile radius. This store, as does Condon's, carries only packaged merchandise. Smart jewelry stores carry an exclusive line of perfumes and colognes, serving both men and women. Drug chains, large and small, as well as individual stores in small centers such as Summerville and Monck's Corner do a big packaged business in perfumes and colognes, bath salts and powders.

There was much money made all through this area during the war. It was not spent then, nor is it now being spent lavishly by those who live there all year 'round. Perfume at $1 is regarded as the limit for most sales, except at Christmas. No cologne over that price has much sale. Perfume sales since Christmas have dropped to a low that is under the 1940 figure. Some outstanding colognes, especially designed for summer wear (and extremely popular) show an upward curve for May, June sale.

TREATMENT LINES ARE DIFFERENT IN THE COAST CITIES

The one outstanding sale in treatment lines is a good skin builder regardless of the name of the maker. If a woman has found it aids her skin she will continue to purchase it for years. Yet many of the creams offered are not as good builders as those in the North where dry skins prevail. Buyers stated that the greasy types had no sale. "Women want a cream that goes on and will not accept the type they should buy. With everyone in the sun, being dried out a great deal, we find it difficult to sell the proper creams that would keep the skin soft and fresh, even under a rich tan," stated this buyer.

Cleansing creams are slow in sale. Not just for the present with a drop in all cosmetic selling, but because women do not care to use them. Neither do they purchase the finer super-fatted soaps. Combine these two factors and there is an open field for an entirely new cosmetic approach. Both types of cleansing are definitely needed.

Fitting into this category is the poor sale of any tinted base for daily use. These tints, which can be used without powder when correctly applied, would, say buyers throughout this area do much to soften the skin. Because women do not want to stress the depth of tan, they refuse to add this important cream to their dressing tables.

Equally as interesting is the fact that women are using very little of the cake-powder in this area preferring the regular loose powder. The younger crowd in the North likes cake-powder, but not so in the South.

The outstanding all-year sale on deodorants is one of the basic items in every cosmetic department, both in the drug-chains and in the department stores. The jewelry and swanky specialty shops do not carry this item, but prefer to stay with the perfumes and colognes on which a mark-up of 60 per cent on cost is taken, while department stores make this a 40 per cent after overhead has been deducted.

There is no one maker of deodorant more popular than another. Many firms who have studied the territory try to confine their lines so that there is little over-lapping. This has been found satisfactory to the stores.

Into this summer sale goes a special cologne, designed to be fresh all through the day. It is so popular that calls are made for it at Christmas, to send out of town. Your reporter was told that this was a type sold largely South of Washington and the largest distribution was in the Coast cities. If some of the centers such as Omaha, Minneapolis and St. Paul, and Detroit and Des Moines learn of this, the one maker (who has spent considerable time in the South, it was said) will have an increased sale, in the days ahead, for it is still on quota distribution.

MEN'S TOILETRIES

There are two men's toiletries lines which are outstanding in this area, both of them pioneers in the field continuing to hold their own. In exclusive stores for men, and in jewelry stores, there is a good year 'round sale done. "Since the war, business has dropped," said a jeweler, "but we did an enormous business when toiletries could be sent overseas," he said.

This jeweler has developed a rather interesting trade for he has been able to obtain dram bottles and will break a package to please a customer. Department stores hope to add such a section, if demand warrants it, but lack of bottles precludes this being considered for the present season. Perhaps for Christmas, 1947, some bottles of different fragrances may be combined in smart packages, store wrapped, and sold with a gay flower wrapping and decoration.

COMPETITION IS HERE AGAIN

Department store buyers and the finer specialty shops have realized that competition has returned. During the war they had fair allotments of the nationally featured brands and built up business on these and expected it to be retained. First competition has come from the jewelry stores handling an exclusive line, but prices are comparable to those of these stores so there is no kick. But since the 5 and 10-cent stores began stocking many of the choicest brands, business has been curtailed because the allotments have been spread so thin. One shipment of lipsticks to a leading department store was one dozen, to retail at $1.50 and were sold within an hour. Across the street the 5 and 10 had the same stick in smaller size for 25¢ and did a land office selling, with matching polish. The store's own polish did not arrive until the next week!

Women are cleverly patronizing both types of stores and sampling many new shades and textures in the smaller sizes. For the consumer it has a decided feature which the department store and shop owner do not yet recognize. For the retail store, it means more intelligent selling and direct approach, suggestions of application and how best to achieve the natural effect of a smart complexion which the 5 and 10 cannot give with a bottle or stick handed across the display case.

KITS NEEDED AT POPULAR PRICES

Career or travel kits for lightness and compactness of items for quick facials or make-up are selling in the larger Northern cities for $5 to $10. These have from eight to a dozen items and are ideal for travel and for office use. None of these has a cologne or deodorant, both of which are essential and could be added to the kit with ease. With these, plus a powder cream, the business girl is set for her two weeks vacation and has every item in one spot. The kit can be opened and needed items used without unpacking.

SALES ACROSS THE COUNTER—Only

Several buyers made the statement to your reporter that the average woman had not the slightest idea of how to apply cosmetics. Yes, they had read about clinics being held for demonstration purposes in some of the great stores in the North but they could not do it. The statement was made by a leading buyer or an outstanding store that a law prohibited stores from demonstrating the application of creams, rouges or make-up either as a partial or complete job. This type of demonstration and know-how for consumer information is reserved exclusively for the beauty shops. What this buyer did not know was that many states have similar laws but the cosmetic department arranges with its own, or a near-by beauty shop of recognized quality, to put on these demonstrations so that no complaint can be made that the cosmetic department is stepping out of its business of selling.

"What if there is such a law?" several buyers in the North asked. "We put on demonstrations and use expert facial operators from our own beauty shops. It makes no difference," said this group of buyers when closely questioned, "whether the creams and lotions they use in demonstration are the same as we sell in the department, the idea is to show women how to use cream and apply it as well as rouge for the best effect. Our girls are all trained but their training is not the same as that of the girl who gives facials for a living and can tell skin texture at a glance. We take no chances in breaking laws, but let the beauty department handle this end of the business." All buyers agreed that this was an excellent medium of future sales, for women often tried several brands before deciding on one. "That's fine for us, because we know that a well satisfied customer is important," they agreed.

Short Adages

R. O'MATTICK

"Lands sake, where did I put that cosmetic department?"

IT is not too late in the season to examine, for some things, anyway, those beautiful seed catalogues which are sent out in the mail to cultivators of gardens. Dr. Rowmateral is an ardent follower of this type of romantic literature and he reads the catalogues of chemical houses with an equal zest and interest.

* * *

He was admiring one of these elaborately bound pamphlets when we dropped in on him and he showed us some remarkable items. "One of the most expensive things I ran across so far," he said, "is crystalline Vitamin A at one dozen dollars per 100 milligrams, which comes up to $120,000 per kilo. That is even more money than you need for a kilo of Absolute Jasmin at 1946 prices. Take the case of rare sugars. They are not quite as costly but a gram of dextro-minus-ribose, if you want that sort of thing will set you back $10 per gram or $4,500 a pound. The longest and most oddly named chemicals are not necessarily the most expensive. Histidine is only $4 per gram but you can get a gram of levo-histidine-monohydrochloride-mono-hydrate for only 35¢."

* * *

Seed catalogues and all make us think and ponder about the rainy weather that has been turning up every week-end and preventing many amateurs of the soil from turning up the flower beds in their gardens. April showers bring May showers and May showers bring June showers but the flowers will eventually come. This horticultural observation is followed by the prediction of one of our friends in the berry-picking business that there will be a large crop of strawberries this season. We hope that is not a rash promise.

* * *

Considering the lull in the cosmetic and perfume business we found the TGA Convention an optimistic gathering. They are not, as one of the members put it, selling the country short or the cosmetic business short. Sooner or later all those jars of creams and bottles of perfumes and boxes of face-powder will be used up. When that day comes somebody is going to send in an order.

* * *

What is this business taking the bitter with the sweet. The price of Bitter Almond Oil is going up while the price of Sweet Almond Oil is going down.

* * *

In spite of everything, including the Newburyport Plan, there are still shortages in some items and advancing prices in others. Oil of Bergamot went up, so did Grapefruit Oil and Lemongrass Oil and Oil of Rue and Citric Acid and Stearic Acid and Menthol and a number of other things.

The turnout at the TGA Convention was larger than anyone expected and this explains why many of the members had to wait a long time to be served during the luncheons —particularly on the third day. The Scientific Section was in full force with most of the scientists at the Bars and most of the salesmen at the lectures. But that was not the fault of Mr. H. D. Goulden who deserves great praise for the excellent job he is doing as Director of Scientific Research and Standards of the TGA.

* * *

A most interesting feature of the printed program was the map showing the distribution of the TGA Membership. We hope to see the day when there will be at least one active member from almost every state in the Union with some additional ones from Canada and Mexico.

* * *

What are the cosmetics that most women would rather not do without? A recent survey shows that what they want most of all is lipsticks, then powder and finally creams. But there is still money around for most women not to do without any of these and to buy some perfume and toilet-water beside. Yes, sir—and that is why there were still so many of the members at the TGA Convention.

* * *

We don't know whether the Republicans or the Democrats will get hold of the White House in 1948 but we are confident that by that time the trend will be away from exotic supersophisticated odors and toward simpler fragrant flower types. The wheel of fashion turns in perfumes as well as in clothes and it is about time the wheel did some real spinning. Odors have become more and more weird during and immediately after the war so that if you had any idea what the new Parfum resembled, the new creation was considered too ordinary to be a success. But how far can this go? Dr. Rowmateral says one of his customers stated he doesn't want anything common as an ingredient—nothing so common as Rose Oil or Jasmin Absolute or Musk Tonquin or Neroli or Violet Absolute but something completely off the beaten track. Has anyone thought of Extract of Burnt Sawdust? You never can tell. We may come to that before the wheel of fashion starts spinning.

FLAVORS

WANT All Industrial Alcohol TAX FREE

F.E.M.A. endorses amendment to make undenatured alcohol for food and medicinal purposes tax free . . . Bond and permit system sought . . . Industry flourishing

TAX free alcohol with a $1.00 per proof gallon administrative tax for medicinal and food purposes was advocated in a resolution of the Flavoring Extract Manufacturers' Association adopted at its 38th annual meeting May 25, 26 and 27 in Atlantic City, N. J. The proposed legislation provides for the bond and permit system and if enacted into law will make all industrial alcohol for non-beverage purposes tax free. About 99 per cent of the alcohol used industrially in other than the medicinal and food industries pays no tax but requires reasonable policing and is withdrawn under permit after posting an adequate bond. If the proposed amendments to Sections 3108 and 3250 of the Internal Revenue Code are enacted into law by Congress in 1948, all alcohol will be tax free except that withdrawn for beverage purposes. Copies of the resolution have been forwarded to the chairmen of the Senate Finance Committee and the House Ways and Means Committee. A great deal of careful work over the years has been done by the Alcohol Tax Committee of the Association of which George H. Burnett is chairman and it is believed that a satisfactory solution of the vexing alcohol tax problem which has been an onerous burden on the industry for years has been found.

Similar careful, cooperative work by the members of the association in working out data for standards for vanilla are so well founded that the government is likely to adopt them. While the work is not completed as yet, it affords an apt instance of what a progressive association may do to aid the government and at the same time protect itself from ill considered regulations.

The meeting was well attended and much useful work was accomplished which was interspersed with wholesome recreation.

NEW OFFICERS

Newly elected officers are: President, George M. Chapman; First Vice President, Leslie S. Beggs; Second Vice-President, John N. Curlett; Third Vice President, Frank D. Nowland; Secretary, Leland P. Symmes; Treasurer, John H. Beach; Counsel and Executive Secretary, John S. Hall.

Executive Committee members are: William B. Durling, chairman; Frank W. Green, Gordon Grant and E. P. Price.

Advisory Committee members are: George H. Burnett, Dr. Clarke E. Davis, Lloyd E. Smith and Garret F. Meyer.

BATTLE AGAINST INIMICAL LEGISLATION

Over 3000 legislative bills were introduced in the past year in Congress and in the various state legislatures directly or indirectly affecting the flavoring products industry. Consequently it was necessary for members of the association to appear before numerous legislative committees to approve some bills and oppose objectionable ones. Members were also called on to personally contact their state and Congressional representatives repeatedly. The work involved a tremendous amount of detail but it was well organized by the association officers and the association counsel. Commenting on this work in his carefully compiled annual report John S. Hall, executive secretary, pointed out that bills introduced but not enacted into law may be the forerunners of other bills in succeeding years so that utmost vigilance must be maintained to protect the

interests of the industry and to preserve the free enterprise system. He felt that the American public ought to be better informed of how the government's effort to help Europe affects the cost of living at home. He also pointed out that we are entering an era wherein the raising of public revenue will be brought about by excise, privilege, special, consumption, sales and use taxes. And it is possible, he added, that the various state agencies charged with the enforcement of the food, drug and cosmetic laws will insist that the industries concerned carry the burden of policing the state control acts by levying annual license or registration fees for that purpose—a deplorable situation because the right to regulate and license carries the hidden authority of the right to destroy.

NEW SOURCES FOR ESSENTIAL OILS

With the dropping of OPA essential oils immediately began to drop in price. William Schilling, president of the Essential Oil Dealers Association reported.

Peppermint and spearmint still command high prices. The crop will be about 1,200,000 lbs. for peppermint and 280,000 lbs. for spearmint. Acreage for spearmint will be about 15 per cent above last year. Prices are likely to hold up. Anise oil is almost at the pre-war level. Lemon and grapefruit oils are likely to continue in tight supply. California orange is a bit short.

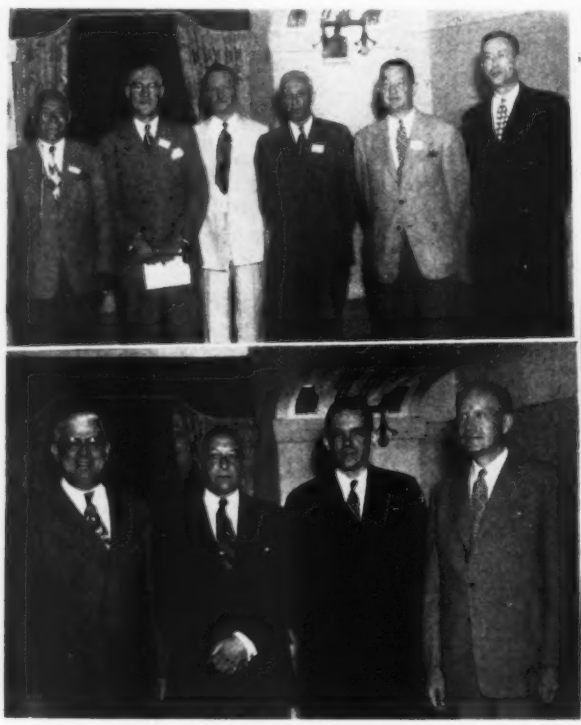
While Ceylon citronella comes in duty free, importers have been combating attempts to adulterate it. There is now an open market on merchandise coming from the Dutch East Indies. Nutmegs received for distillation are of varying quality and the yields of oil are not satisfactory. Vetivert and cananga prices have dropped.

Considerable essential oils are now being received from Central and South American countries. Guatamala is producing citronella and lemongrass oils; Haiti is producing vetivert, sandalwood, lemongrass and lime oils and is experimenting with citronella and geranium. Brazil is the largest producer of menthol and is increasing its output of orange oil.

Large amounts of clove spice for distilling have been received from Madagascar but with civil war there, price are likely to be firm.

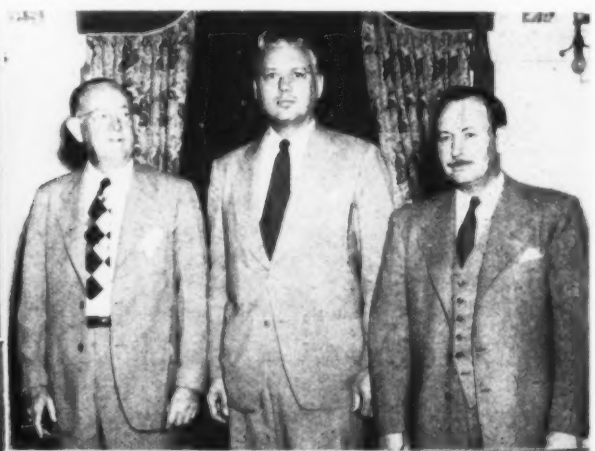
A SURPLUS OF SUGAR; DEMAND OFF

Price and rationing controls on sugar will continue until October 31 of this year. But the inability of many potential buyers to pay for sugar has operated to increase the available supply and the demand for it appears to be slowing up. Storage space is inadequate to handle the sugar that has been processed. There are heavy stocks of raw and refined sugar in the hands of refiners and some have rejected tenders of raw sugar cargoes. Distributors it seems, however, are not carrying adequate stocks. U. S. cane sugar refiner stocks May 1 were about 560,000 tons. Cuba will produce this year the largest sugar crop in its history, about 6,250,000 short tons. Porto Rico will produce about 1,000,000 tons and Hawaii, 800,000 tons. What is lacking is a good distribution to the household and industrial users.



Top left: New Officers—John H. Beach, treasurer; George M. Chapman, president; John S. Hall, executive secretary and counsel; Leslie S. Beggs, first vice president; John N. Curlett, second vice president; Frank C. Nowland, third vice president. Leland P. Symmes, secretary, absent

Bottom left: Advisory Committee—Dr. Clarke E. Davis, George H. Burnett, chairman; Lloyd E. Smith and Garret F. Meyer



Top right: Executive Committee—Frank W. Green, W. Gordon Grant and William B. Durling, chairman. E. P. Price absent

Bottom right: Vanilla Bean Specialists—Philip Steuben, Michael Cortizas, C. M. Ferri, E. B. Vina, William Schilling and Henry Saloman. Much light was thrown by these men on the complex vanilla situation due to after war conditions in the various producing centers of the world, notably the Far East

The foregoing are some of the highlights of the analysis of the sugar situation by Ody H. Lamborn.

TECHNICAL PROGRESS

"Odor in Flavor" was the subject of an interesting scientific study by S. E. Crocker. Other valuable and informative papers presented were: "The Use of Water Soluble Gums in Flavoring Emulsions" by Charles M. Ferri; "Observations on Analytical Methods" by I. F. Plagge and the report of the Scientific Research Committee. All will be published in whole or in part in later issues.

VANILLA OUTLOOK

Madagascar, in the throes of a revolution and faced with an unusual labor situation is in an unfortunate situation and the next vanilla crop will be the smallest in 25 years Ray C. Schlotterer, secretary of the Vanilla Bean Association, reported. In Mexico a large crop is reported with another to follow but there is doubt that there will be any drastic changes in the prices being quoted for new crop whole Mexicans or Mexican cuts.

The Vanilla Bean Association has attempted to remove as many of the restrictions on the free flow of Vanilla from French possessions as possible. While the removal of quotas has been accomplished, the fight is being continued against unreasonable increases in the fixing of minimum prices and on the insistence of the shipment only of properly cured Bourbon vanilla beans.

PROTECTING THE FREE ENTERPRISE SYSTEM

All flavoring extract manufacturers were urged by Paul S. Willis, president of the Grocery Manufacturers of America, Inc., to join fellow members of the food industry in proving to the world and to our own left wingers that the free enterprise system yields the greatest good to the greatest number. "Even in the United States," he said, "we have people waving the flag of free enterprise and at the same time advocating governmental actions which are completely contradictory to the system. These men seemingly lost sight of the fact that this country has a profit and loss system—not a profit system—and that when a concern invests money in a business it must take the risk of sustaining a loss along with the hope of making a profit. We must recognize that we can only have a free enterprise system if we operate on a profit and loss basis and not on the basis of a concern expecting to retain its profits and let Uncle Sam pay for its losses."

Other features of the business program included motion pictures in color on the cultivation, curing and production of vanilla beans by Dr. Alexander Katz; an address by Henry Miller, director of trade practice conferences of the Federal Trade Commission who pointed out the advantage of industry made rules for governing itself and a stimulating address by Dr. Allen B. Stockdale of the National Association of Manufacturers on the necessity for intelligent public relations work by business concerns. Myron J. Hess, general manager of the S. Twitchell Co. spoke largely off the record on the Pennsylvania food law situation.

PROGRESS REPORTS

J. M. Blatterman discussed the activities and the year's work of the Scientific Research Committee; George M. Chapman reported for the Membership Committee; Leslie S. Beggs for the Trade Relations Committee; Walter H. Kukl for the Standards Committee; Lloyd E. Smith for the Advertising Committee; Mr. Hottinger for the Legislative Committee; Percy Storr for the Raw Materials Committee and George H. Burnett for the Resolutions Committee. A rising vote of thanks was extended to retiring president William B. During following the adoption of a resolution on his able direction of the affairs of the association.

An interesting boat trip around Atlantic City was one of the highlights of a varied and interesting entertainment program enjoyed by the members. The annual banquet was the main event

ENTERTAINMENT

A boat trip around Atlantic City, a golf match, a steak dinner at a leading night club and the annual banquet were the features of the entertainment program.

All told, the convention was a marked success in every way and this was due largely to the work of the Convention Committee of which Dr. Clarke E. Davis was chairman, assisted by John H. Beach and George M. Chapman. William F. Fischer was chairman of the registration committee and was ably assisted by Louis J. Woolf, Fred J. Lueders, Frank W. Green, Charles Homan, Robert Krone, Frank D. Nowland, Louis Gampert, Howard L. Jenks, Cecil Rice, C. E. Langfield, William J. Woodhull, Jr., F. W. Stechmann, William Sunn and F. D. Rucker. Frank W. Green was chairman of the golf committee and F. F. Rauch of the Reception, Dance and Banquet Committee. Mrs. John H. Beach and Mrs. Clarke E. Davis acted as co-chairmen of the Ladies' Reception Committee.

Members of the Reception, Dance and Banquet Committee were: F. F. Rauch, Leslie S. Beggs, Frank D. Nowland, R. M. Troutman, Lewis H. Allyn, R. Krone, R. P. Neptun, Percy Storr, Philip I. Heuisler, Jr., F. D. Rucker, R. Gordon Smith, Gert Keller, Paul H. Manheimer and Paul N. Sperry. Brigadier Edward L. Knisell was call boy; Robert Krone and John H. Beach were sergeants-at-arms.

Edward Marum and Donald Jenks tied for first place in the golf tournament. A play-off will take place during the Summer at Grand Rapids, Mich.

Competitive conditions will test the fitness of your products

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a new fragrance
and FELTON *creates it*

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a new fragrance is desperately
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to make women stop and say: Perfect Fragrance!
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MANUFACTURERS OF PERFUME OILS, AROMATIC CHEMICALS, ESSENTIAL OILS AND FLAVORS

Tobacco Flavors

Virtually all types of flavoring materials, essential oils, spices, herbs, semi-synthetics and synthetics are common components of tobacco flavors

MORRIS B. JACOBS, Ph.D.*

TOBACCO, *Nicotiana tabacum* L., is an annual plant in the United States but in tropical climates, it is a bi- or triennial. It is probably indigenous to America but is now grown all over the world. It is said that Columbus found Aborigines smoking cylinders of tobacco leaves at St. Domingo in 1492 but its introduction to Spain is attributed to Francisco Fernandes who brought it from Mexico in 1558. From Spain, it was introduced to the rest of the European continent by Jean Nicot, French Ambassador to Portugal. The botanical name of the plant is derived from his name. Other species of *Nicotiana* have been and are cultivated like *N. macrophylla* in Maryland, *N. rustica* in the East Indies, and *N. persica* in Iran. The commercial product is yellowish brown in color; it has a bitter, acrid taste; and has a strong, narcotic odor.

Nicotine is the chief alkaloid of tobacco and its concentration ranges from 2 per cent in bright varieties to 5 per cent in dark types. There are lesser amounts of nornicotine, nicotimine, nicoteine, nicotelline, nicotyrine, anatabine, 1-*N*-methylanatabine, anabasine, *N*-methylanabasine. In the Turkish type of tobacco, isonicoteine and nicotoine are said to be present. Bases such as ammonia, trimethylamine, isoamylamine, piperidine, 2,3-dipyridyl, pyrrolidine, and *N*-methylpyrroline have been isolated.

The agreeable and desirable aroma of tobacco, starting with an adequate agricultural product, is developed by three operations known as curing, fermentation and aging.

CURING

Because the curing process develops the natural flavor and aroma of tobacco, it is a most important step. The principal methods of curing are: (1) air-curing, (2) fire-curing, (3) flue-heat curing, (4) the Kentucky cure, (5) sun-curing, and (6) special curing methods.

Air-curing is performed by suspending the tobacco leaves in barns arranged for free air circulation. This process requires about 6 weeks for completion. In the fire-curing method, the temperature is raised to 150 deg. F. for 4-5 days by use of slow fires, after the leaves have turned yellow. When yellow leaf cut tobacco is cured by use of flue heat, the temperature is raised gradually from 90 deg. F. to 160 deg. F. and in more drastic treatment to 180 deg. F. in a process requiring 3 to 5 days. In the Kentucky cure, which extends over a period of 4 to 6 weeks, a temperature of somewhat less than 100 deg. F. is maintained. In the sun-curing process, the leaves are exposed in the open. This process is no longer performed in Virginia but is still used in some Eastern and South American countries.

The curing of latakia-type tobacco can be taken as an example of special curing methods. In this case, it is reported, the peculiar aroma and flavor are developed by use of camel-dung fires.

FERMENTATION

After curing, the tobacco leaves are made up into bunches which are arranged in heaps to permit the enzymes of the plant to operate. These processes of metabolism cause a loss of starch and sugar and make changes in the alkaloids and other nitrogenous components mentioned above. The heaps are restacked from time to time in order to prevent the temperature from going higher than 130 deg. F. This processing requires about a month. Flue-cured tobacco is not, however, put through a fermentation process.

AGING

After packing the tobacco in barrels, bales, cases, boxes, or in other ways, it is stored, at times for years, to mature and develop the aroma and flavor desired. Undoubtedly some fermentation goes on during the aging process. In one variation of the aging process, the tobacco, generally packed in bales, is shipped on slow freighters on long ocean voyages so that sufficient time is allowed for the tobacco to pick up the tang of the sea.

ADDED FLAVORING

In addition to the aroma and flavor developed by the processes of curing, fermentation, and aging, divers types of flavoring ingredients have been added to tobacco virtually from the beginning of its utilization. Thus the Indians often added herbs to their tobacco to obtain variations in flavor.

* Adjunct Professor of Chemical Engineering, Polytechnic Institute of Brooklyn.

You can depend on it!

When manufacturing, processing, or purchasing basic perfumery raw materials our prime objective is always to produce or secure the finest possible qualities.

The essential oils, natural flower oils, fine aromatic chemicals, isolates, animal fixatives, balsams and other basic materials which we offer for sale are the same uniform, high quality products which we use in our fine perfume concentrates.

The prices quoted are always commensurate with the fine quality of the products.

We invite your inquiries!

COMPAGNIE PARENTO

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SEATTLE · PHILADELPHIA · TORONTO · MONTREAL · LONDON, ENGLAND

The many types of flavorings added to tobacco may be conveniently classified into the following groups:

1. Sweetening agents and humectants
2. Alcoholic beverages
3. Flavor essential oils
4. Flavor extracts
5. Spices and herbs
6. Synthetics and isolates
7. Perfume materials
8. Oxidizing materials

Sweetening agents and humectants.—Probably the most common sweetening agents added to tobacco to produce a sweet flavor and during burning caramelization are maple sugar or syrup and sucrose. Honey, molasses, and other syrups have also been used. A difficult problem in the tobacco industry is the prevention of loss of moisture in finished products such as cigarettes, cigars, pipe tobacco, etc. To overcome and prevent this loss, various materials have been used, many of them being sweetening agents. Among those commonly mentioned are invert sugar, commercial glucose and apple sirup. The latter product, derived by a special process, is a complex mixture of ingredients such as fructose or levulose, D -glucose, and sucrose. Small amounts of the acid characteristic of apples, malic acid, are present as well as other apple ingredients such as pectin, tannin, the coloring matters, and the ash. This material, because of its high fructose content, has been found to be a substitute for glycerol as a humectant. An additional favorable factor is that it does not impart an off-taste to tobacco products. These sugar products make the tobacco flexible and elastic.

Glycerol, and very likely other polyhydroxy organic compounds such as glycols, sorbitol and its mixtures have been employed as humectants for tobacco products. Products yielding arabinose such as gum arabic have also been employed for this purpose.

Often caramel, that is, sugar coloring, is added to give directly a caramelization effect.

Alcoholic beverages.—Rum is probably the most common alcoholic beverage used for the flavoring of tobacco. It is often used in combination with many of the other categories mentioned above, serving as the base for the addition of these flavoring ingredients. Neutral spirits are employed at times as the solvent for the flavors to be mentioned. Wine, itself, and often cognac oil are also used.

Flavor essential oils.—These products are customary components of tobacco flavor formulations. Their use is undoubtedly an outgrowth of the use of spices and herbs themselves in the flavoring of tobacco. Among those mentioned in the various formulations are the oils of anise, calamus, caraway, cassia and cinnamon, cloves, dill, ginger, lemon, lovage, mace, orange, pimento, and valerian.

Flavor extracts and essences.—These materials form a most important group of tobacco flavor ingredients for they are in a form readily applied to the tobacco. Fluid extract of licorice is very important. Vanilla extract and tonka extract are used. Fluid extract of guarana is mentioned in formulations. Among the tinctures used are benzoin, cascarilla, cinnamon, tonka, and vanilla. Maple and walnut flavors, both natural and artificial, are also very commonly used.

Spices and herbs.—As mentioned, these were among the first flavoring ingredients to be used. In many instances, herb-like plants were used to replace, in part or completely, tobacco. Some herb products are prepared to simulate cigarettes in order to avoid the high taxes placed on tobacco cigarettes in some countries. There are certain stores, at the present time, which specialize in selling herbs directly to the consumer so that he can prepare his own tobacco flavor formulation.

Synthetics and isolates.—Synthetic chemicals and isolates are playing an increasing role in tobacco flavor compositions. Except for a few substances, however, this field has scarcely been scratched. Among the synthetics most commonly used are, as might be expected, vanillin and coumarin, but formulations mentioning eugenol, ethyl acetate, ethyl formate, and ethyl sebacate are also in the literature. Menthol, both the isolate and synthetic, and methyl salicylate are customary components of formulations designed to give a cooling effect.

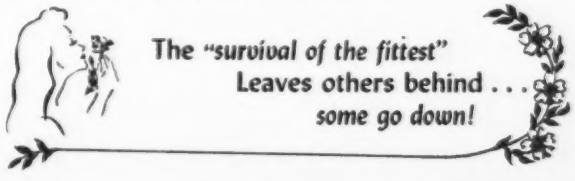
Perfume materials.—One of the earliest practices in the "flavoring" of tobacco has been the addition of perfume ingredients. These served to give the tobacco an unmistakable, characteristic aroma. Perfume materials are added in various ways, as extracts, as perfume essential oils, and as tinctures. Among the tinctures used are ambergris, civet, musk, and orris; among the extracts are jasmine, rose, and tuberose; among the oils are cedarwood, cypress, neroli, and attar of rose.

Oxidizing and other materials.—Sodium nitrate and saltpeter (potassium nitrate) have been added in order to assist in the combustion of the tobacco. Acids such as acetic citric and oxalic acid are employed to make tobacco milder. This action is probably the result of neutralization of the bases mentioned above.

There are several methods for the addition of the aforementioned flavor ingredients to tobacco. In one method, the liquid containing the flavoring components is applied while warm to the tobacco leaves. This assists in penetration. The flavored tobacco is placed in a machine capable of being sealed hermetically. This avoids loss of flavor components by evaporation. Such machines are generally equipped with an agitating device so that the entire apparatus can be rocked and thus allow the flavor to be thoroughly dispersed. A similar process is used for the humidification of tobacco.

In an alternative process, the tobacco is placed in heaps on a factory floor and the casing liquid (the term given to the solution of flavoring ingredients), is sprayed on the heaps. This spraying requires skill in order to produce uniform results. As a typical illustration, 8 ounces of licorice root ground to a flour and 4 ounces of tonka beans also ground to a flour are suspended in 3 quarts of rum. The mixture is sprayed on the tobacco, which is covered and then permitted to stand for one, and preferably, two days.

In the preparation of casing liquids it is necessary to boil the water that is used, and the final casing liquid, itself, in order to sterilize the material. This avoids the likelihood of mold growth in the tobacco.



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Flavored Notes

During the past month several inquiries were received and replies were forwarded under separate cover. The substance of some of these replies follow:

* * *

Does finely divided silver quicken the aging process of alcoholic beverages? Finely divided metallic silver, sold under a number of trade names, is said to have a catalytic effect upon the aging of alcoholic beverages. This action is supposed to be attributable to the effect of the metal in increasing the rate of esterification. Other noble metals such as platinum and gold are also said to have this effect. There is very little scientific data in the literature that definitely proves this contention.

* * *

The addition of sufficient sugar or other sweeteners to a given product to mask or modify a sour taste is sometimes called neutralizing the sourness. This is incorrect use of the term neutralizing from the chemical point of view.

* * *

In a recent issue of Consumers' Guide, a publication of the United States Department of Agriculture *12*, No. 4, 13, (1947); a beginner's herb garden is described which could include the following:

Pungent herbs: Rosemary, sage, winter savory.

Herbs strong enough for accent: Sweet basil, dill, mint, sweet marjoram, tarragon, thyme.

Herbs especially good in blends: Chervil, chive, parsley, summer savory.

* * *

The variation in flavor perception, particularly of the untrained, is probably greater than other physiological responses.—*M. B. J.*

Sugar Production

Belgian sugar production from the 1946 sugar-beet crop amounted to 233,288 metric tons, raw value, as compared with 141,000 tons in 1945. The 1946 production, which is only about 10 per cent below prewar, was achieved through plantings of only 44,000 hectares (1 hectare=2.471 acres), the increase being attributed to very high yields per hectare and to high sugar content of the beets.

Sugar production in Barbados, British West Indies, in 1946, amounted to 133,720 long tons (including sugar content of edible molasses), which is about 15,000 tons more than the 1945 output, and the largest yield since 1939 when 156,352 tons were produced.

A total of 98,118 tons of sugar and 6,867,880 gallons of molasses were exported in 1946, as compared with 100,135 tons of sugar and 8,235,368 gallons of molasses in 1945.

The results of Trinidad's sugarcane replanting program became evident in the 1946 figures of production, when 109,603 long tons of sugar were manufactured, as compared with 76,347 tons in 1945 and 74,262 tons in 1944.

Estimated local consumption and allocation to individual mills and consuming organizations remained the same as in previous years, a total of 20,000 long tons being set aside for that purpose; of this allotment, 2,500 tons consisted of granulated sugar. This amount will be increased by 500 tons during 1947, to accommodate greater demand by manufacturers for export of candy and beverages.

During 1946 exports of sugar totaled 87,067 long tons. About 60 per cent of the sugar was shipped to the United Kingdom and the remainder to Canada.

Molasses exports were practically nil in 1946. The bulk of the available supply was used in the manufacture of rum, of which 618,130 proof gallons, valued at $1,229,345, were exported during 1946.

As of December 31, 1946, sugar stocks amounted to about 1,229 long tons.—*Foreign Commerce.*

Lemon Powder Offered

Over two million twelve ounce cans of lemon powder are offered for sale by the War Assets Administration. The price is 4¢ a can to wholesalers, 4.8¢ a can to small retailers, and 4.5¢ a can to large retailers.

Contents of the cans are described as consisting of dried pure lemon juice with corn syrup, citric acid, dextrose, ascorbic acid, lemon oil and tri-calcium phosphate.

Samples may be inspected at Medical Sales Divisions in San Francisco, Los Angeles, New York, Seattle, Chicago and Richmond. Orders should be sent in duplicate to the Director, Medical Sales Division, War Assets Administration, Washington, D. C.

Fruit and Syrup Makers Meet

Manufacturers of specially prepared fruits, nuts, syrup, etc. for ice cream, soda fountain, dairy drinks and other uses are back on a competitive footing and competition is beginning to start things really humming, William H. Hottinger, Jr., president of the Fruit and Syrup Manufacturers Association told the members at the annual meeting in Atlantic City, N. J., May 29.

He urged every company in the industry to appoint one man to advise the association of any proposed law or regulation that might affect the fruit and flavoring syrup business in their state or locality so that appropriate action could be taken.

In reviewing the past year he pointed out that most government controls had been removed, that glass containers are now in adequate supply, that shipping containers are adequate, that the traffic situation is clearing up so that there are no long delays and embargoes on merchandise being shipped to customers and that the labor situation is much improved. He felt that sugar rationing could well end in 60 days although it will continue until October 31. Inventory controls over sugar have been released so that manufacturers are no longer limited to a 30 day supply.

As yet no definite time has been set for hearings by the Food and Drug Administration to set standards for fountain fruits and flavoring or flavoring syrups.

The association now has its largest membership and its finances are in a better condition than they have ever been since the founding of the association 30 years ago.

SOAPS

Synthetic Detergents and Odors

Synthetic detergents show deodorant action whether used in water solutions or as the dry powder . . . Their effects on odors and perfumes are presented

LAWRENCE H. FLETT,* GILBERT C. TOONE,* EARL L. BOOTH†

THE pleasures and displeasures of our daily life are greatly influenced by odor. Human senses distinguish a multitude of odors, some of which are pleasant and some of which are unpleasant. For example, the aroma from foods and the delightful bouquet of wines contribute greatly to the enjoyment of a meal, while on the other hand, lack of cleanliness in the handling of food may lead to nauseating odors, which destroy the appetite.

DEODORANT EFFECT OF SYNTHETIC DETERGENTS

Early in the study of "Nacconols"[1] it was found that "Nacconols" and other synthetic detergents are deodorants. The term is used here in its true sense to mean that they lessen or absorb odors when they are mixed with odoriferous substances. These detergents show deodorant action whether they are used in water solutions or as the dry powder. The deodorant effect is not uniform. Some odors are almost completely absorbed by the synthetic detergent, while certain other odors are not perceptibly diminished.

EFFECT OF SYNTHETIC DETERGENTS ON PERFUMES

Many preparations made with synthetic detergents require perfuming, for example, shampoos, hand soaps, dentifrices and household cleaners. Where "Nacconols" are used in such preparations they do not absorb all odors to an equal extent so they may exert either a general or a preferential deodorizing action on the constituents of the perfume. A better understanding of the deodorant action of the synthetic detergents would make possible a wiser choice of the chemicals used for perfuming them.

SYNTHETIC DETERGENTS CONTROL OFFENSIVE ODORS

The study of the use of detergents for the elimination of objectionable odors is important because deodorization supplements the normal use of the detergent as a cleaning agent. One of the most important functions of cleaning is the disposal of odors. Odors which are offensive to humans generally come from bacterial decomposition of organic matter. Such odors can generally be prevented by washing away the causative organic residues or by washing away the bacteria. Sometimes the bactericidal[2] action of the residual detergent held by the washed surface is adequate to prevent the odors of decomposition. There are, however, times when practical washing procedures don't remove odors. This is particularly evident in used kitchen utensils, garbage pails and dairy equipment. In such cases any deodorant action, which the washing agent has, becomes very useful.

It is the editorial policy of THE AMERICAN PERFUMER to use chemical names for all ingredients, and/or products, but some materials cannot be adequately described or identified except by the use of trade names adopted by the manufacturer. The quality and composition of the products designated by trade names are, of course, the responsibility of the manufacturer.

* New Products Div., National Aniline Div., Allied Chemical & Dye Corp.
† Larkin Products, Inc.

The authors wish to express their appreciation to Dr. R. R. Read and personnel of the Lambert Pharmacal Co., for their courtesy in the determination of odors with the Osmoscope.

Up to recent years, soap has been the principal and practically the only successful cleaning agent. By washing clothes and dishes with soap, it was possible to wash away most odoriferous substances, many of the bacteria, and much of the organic matter on which bacteria breed. After washing with soap, however, the soap must be carefully rinsed away. Soap residues are alkaline and may be irritating to the skin of sensitive persons. Furthermore, soap residues are themselves subject to oxidation and bacterial decomposition with the resultant development of objectionable, rancid odors. "Nacconol" NR and NRSF on the other hand, are neutral, non-irritating and thoroughly stable, so that if any advantage is to be gained, residual material may be left on the washed object. There is also some advantage in the residual detergent aside from any deodorizing action it may have. It renders the washed material repellent to insects, bacteriostatic, and somewhat resistant to mildew. Where it is not necessary to carefully wash off the residual detergent, it is practical to leave residual material to act as a deodorant.

A preliminary study has been made to determine what use can be made of the deodorizing action of "Nacconol" NRSF and to determine its effect on perfumes. It is planned to follow this preliminary work with further studies. "Nacconol" NRSF is a technically salt-free mixture of stable sulfonates. The technical material has a slight oil-like odor, but experiments have shown that a highly-purified, odorless product deodorizes just as effectively. The deodorant effect of "Nacconol" NRSF was determined with respect to ordinary chemical odors as well as perfumes and household odors.

EXPERIMENTAL

In testing the effect of surface active agents on chemical odors, a study was made of the deodorizing effect of "Nacconol" NRSF both in the dry form and in the form of solutions.

DEODORIZING WATER SUSPENSIONS

Part A: The deodorant tests using solutions were conducted by adding the odoriferous substance dropwise to a test tube containing about 10 mls. of water until a definite odor of the chemical or perfume was noticeable above the solution. The odoriferous substance was then added dropwise to a 20 per cent "Nacconol" NRSF solution until the initial odor was equal to that of the water suspension. The solutions were then allowed to stand several hours after which another comparison of the intensity of odor was made. Results of this test are given in Table I. In our comparisons the terms, "slight," "appreciable," "considerable," and "much" indicate the increasing strength of odor.

These results show that in about one-third of the tests, three or more times as much material was required to give a definite odor to the "Nacconol" NRSF solution as was required to give the same odor in water. In most cases there was a definite fading of the odors to the "Nacconol" NRSF solutions. This makes the deodorizing effect of "Nacconol" NRSF much more pronounced when the solutions have been allowed to stand. In only two cases was there no evidence of deodorant action.

Part B: This test was run in a similar manner to Part A. One drop of aromatic material was placed upon 10 cc of a 20 per cent solution of "Nacconol" NRSF. A control was made using distilled water in the same proportions. The results are given in Table 2. In every case some diminution of odor was apparent when the aromatic chemicals were tested. In four cases the effect was slight, in seven cases it was very noticeable and in four cases the effect was very pronounced.

Similar experiments with selected chemical odors were made using concentrations of detergents varying from 20 per cent to 0.5 per cent. In general, the deodorant effect of the "Nacconol" NRSF became less as the concentration became smaller. However, with certain types of odor the deodorant effect was observable with solutions as low as 1 per cent in strength.

DEODORIZING WITH DRY "NACCONOL" NRSF

In these tests, 1.0 gram of "Nacconol" NRSF was placed in the bottom of a test tube. One drop of the odorous substance was allowed to drop onto the flakes. Controls were run in which the drop of the substance tested was added to the same proportion of finely powdered sodium sulfate.

TABLE I

Deodorizing Action of "Nacconol" NRSF Solutions on Ordinary Organic Chemicals and Proprietary Perfumes
Comparative Odor of Substance in "Nacconol" NRSF Solution vs. Control After Standing

Chemical Substance	Drops*	Equal	Slightly Weaker	Appreciably Weaker	Considerably Weaker	Much Weaker
Dodecane	1	—	—	—	X	—
Xylene	1	—	—	—	—	X
Lauryl Alcohol	4	—	—	X	—	—
Capryl Alcohol	1	—	—	—	—	X
Amyl Acetate	2	X	—	—	—	—
Butyl Cellosolve	3	X	—	—	—	—
Diethyl Cellosolve	4	X	—	—	—	—
Benzaldehyde	1	—	—	—	—	X
Cyclohexanone	5	X	—	—	—	—
Trichlorpropane	2	—	—	X	—	—
Lauryl Amine	20	—	—	X	—	—
Geraniol	2	—	—	X	—	—
Perfume						
Lavande	2	—	—	X	—	—
Santal	2	—	—	—	—	X
Kerodor	1	X	—	—	—	—
Aldehyde C-11	1	X	—	—	—	—
Formarome Violet	10	—	—	X	—	—
Balsamarome	1	—	—	X	—	—
Russian Leather	3	X	—	—	—	—

*Material required to produce definite odor (Ratio of drops of substance in "Nacconol" NRSF Solution to drops in water)

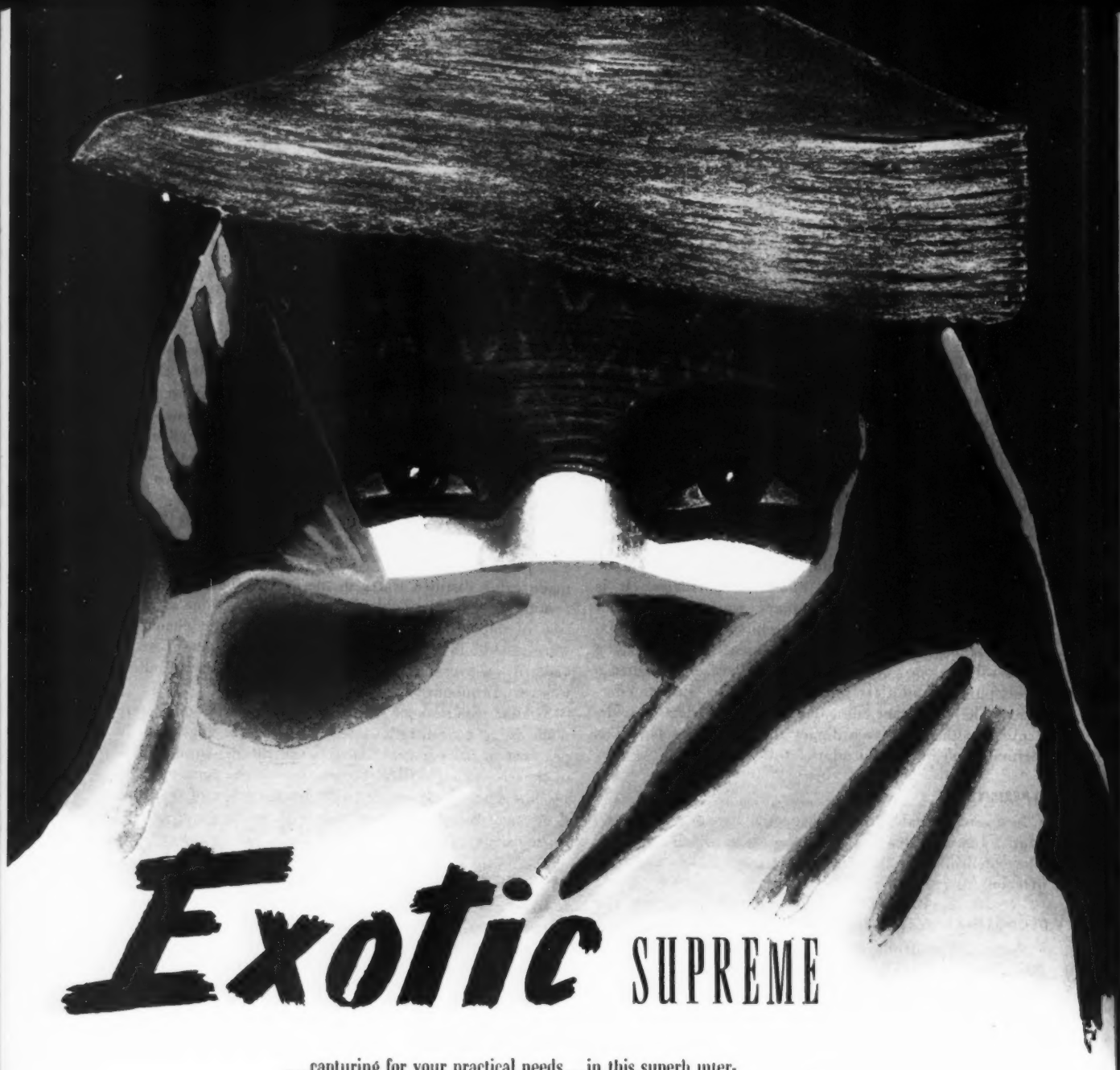

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TABLE 2

Deodorizing Action of "Nacconol" NRSF Solutions on Aromatic Chemicals and Proprietary Perfumes

Comparative Odor of Substance in "Nacconol" NRSF Solution vs. Distilled Water Control

Chemical Substance	Slightly Weaker	Appreciably Weaker	Considerably Weaker	Much Weaker
Civet Art AA	—	—	X	—
Oil Thyme Sp Wh	—	X	—	—
Oil Petitgrain S A	—	X	—	—
Oil Peppermint RD	—	X	—	—
Oil Anise RD	X	—	—	—
Terpineol	—	—	X	—
Chanel #5	—	—	X	—
Onion Powder 100 mg	—	X	—	—
Cinnamic Aldehyde	X	—	—	—
Vanillin 100 mg	—	X	—	—
Phenyl Ethyl Alcohol	—	X	—	—
Freshet	X	—	—	—
Oil Patchouly Su	—	—	—	X
Citral	—	X	—	—
Benzyl Salicylate	X	—	—	—

The test tubes were capped with corked stoppers and allowed to stand for several days while the odor was observed. The results of this experiment are given in Table 3.

The dry "Nacconol" NRSF acted as a deodorant in all but two cases. The deodorizing effect was variable but was very pronounced with more than half of the substances tested.

DEODORIZING PERFUMED SURFACES

In order to determine the deodorant action of "Nacconol" NRSF toward perfumed surfaces, drops of chemicals or perfumes such as Lauryl Amine, Russian Leather and Geraniol were placed on porous tiles and blocks of wood. After the liquid was absorbed, 0.50 mls of a 20 per cent solution of "Nacconol" NRSF was pipetted onto the same spot and allowed to soak into the tile or wood. With the Geraniol and Russian Leather, particularly, there was a very marked reduction in odor.

THE EFFECT OF "NACCONOL" NRSF ON DOMESTIC ODORS

The action of "Nacconol" NRSF, in the dry form and in the form of solutions, on domestic odors, such as kitchen-type odors and the odor of perspiration, was investigated by several different methods.

KITCHEN ODOR CONCENTRATES

The deodorant effect of "Nacconol" NRSF on various kitchen odors was determined in a series of experiments in which the odorous substance was crushed in the bottom of a test tube, solid particles removed, and 1.0 gram of the dry "Nacconol" NRSF added. Duplicate tubes containing powdered sodium sulfate instead of "Nacconol" NRSF were prepared as controls. The odors used were onion, garlic, fish, cabbage, sauerkraut, and burnt Crisco (made by superheating Crisco in a test tube to a decomposition point).

The effects of the synthetic detergent on the various odors are given in Table 4. With this type of smell a definite deodorizing action was obtained in each case.

KITCHEN ODOR VAPORS

Two absorption tubes were prepared, one containing "Nacconol" NRSF and one containing sodium sulfate. One end of these tubes was held in the vapors above boiling cabbage and sauerkraut. In smelling through these tubes it was noted that the cabbage or sauerkraut odor was greatly reduced through the tube containing the detergent.

TABLE 3

Deodorizing Action of Dry "Nacconol" NRSF on Ordinary Organic Chemicals and Proprietary Perfumes

Chemical Substance	Comparative Odor of "Nacconol" NRSF vs Control: Equal	Slightly Weaker	Appreciably Weaker	Much Weaker
Xylene	X	—	—	—
Lauryl Alcohol	—	X	—	—
Capryl Alcohol	—	—	X	—
Amyl Acetate	—	—	—	X
Acetic Anhydride	—	—	—	X
Diethyl Cellosolve	—	X	—	—
Butyl Cellosolve	—	—	—	X
Cyclohexanone	—	X	—	—
Lauryl Amine	—	—	—	X
Geraniol	—	—	—	X
Perfume				
Santal	X	—	—	—
Formarome Violet	—	—	X	—
Russian Leather	—	—	X	—
Lavande	—	—	X	—
Balsamarome	—	—	—	X
Aldehyde C_{16}	—	X	—	—
Carnation	—	—	X	—
Rosex	—	X	—	—
Chanel #5	—	—	X	—
Freshet	—	—	X	—
Aromatic Materials				
Civet Art A A	—	—	X	—
Oil Thyme Sp. Wh	—	—	X	—
Oil Petitgrain S A	—	—	X	—
Oil Peppermint R D	—	X	—	—
Oil Anise, R D	—	—	X	—
Terpineol	—	—	X	—
Onion Powder 100 mg	—	X	—	—
Cinnamic Aldehyde	—	X	—	—
Vanillin 100 mg	—	—	X	—
Phenyl Ethyl Alcohol	—	—	X	—
Oil Patchouly Su	—	X	—	—
Citral	—	X	—	—
Benzyl Salicylate	—	X	—	—

TABLE 4

Effect of Dry "Nacconol" NRSF on Household Odors

	Appreciably Deodorizing	Very Strongly Deodorizing
Onion*	—	X
Garlic	X	—
Cabbage	X	—
Sauerkraut	X	—
Burnt Crisco*	—	X
Fish	X	—

* The deodorant effects on onion and scorched Crisco were very marked.

In another experiment, garlic and onion were crushed on a watch glass. Then one ml of a 20 per cent solution of "Nacconol" NRSF was placed on the watch glass and allowed to dry at atmospheric temperature. The glasses treated with "Nacconol" NRSF were then compared with the untreated controls. There was an appreciable reduction in odor on the watch glasses treated with the detergent, particularly in the case of the garlic.

PERSPIRATION ODOR

A 10 per cent solution of "Nacconol" NRSF was sponged onto the under-arm portion of one sleeve of a man's shirt which had been worn sufficiently long to develop considerable perspiration odor. After drying there was a negligible amount of odor left on the treated sleeve.

Odor intensities may be compared in a simple instrument called the Osmoscope, which has been described by O'Brien, Read, and Morris.[3] In this instrument it is possible to dilute the incoming odor with air in a series of

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dilutions arranged by the powers of 2 until the odor disappears. The values are reported as pO, similarly to the usage in stating hydrogen ion concentrations. The Osmoscope is used by successively decreasing the dilution until the odor just appears, the dilution at which the odor appears being the pO value.

Geraniol and onion in "Nacconol" NRSF were compared by this method, using sodium sulfate as a control.

	pO Value	Dilution Ratio
"Nacconol" NRSF—Onion	3	1:8
Sodium Sulfate—Onion	5	1:32
"Nacconol" NRSF—Geraniol	5	1:32
Sodium Sulfate—Geraniol	6	1:64

In other words the odor coming from the "Nacconol" NRSF-Onion sample vanished when it was diluted with only 7 parts of air, while with sodium sulfate it was necessary to dilute it with 31 parts of air. In the case of the "Nacconol" NRSF-Geraniol sample, a dilution with 31 parts of air was necessary, while with the Sodium Sulfate-Geraniol mixture a dilution of 63 to 1 was necessary.

CONCLUSIONS

From these few experiments it can be concluded that "Nacconol" NRSF has a general deodorizing action on perfumery compounds, domestic odors and on personal odors. The extent of this deodorizing action varies with the many types of odorous chemicals. While this deodorizing action introduces problems in perfuming, it is an advantage in those cleaning operations where it is desired to remove and prevent odors. If traces of odorous substances are not completely washed away during the cleaning operation, small residues of the synthetic detergent which are likewise left will aid in reducing the odor.

While incomplete washing and rinsing are generally not recommended where cleanliness is the desired end, there are times when complete rinsing is impractical. In such cases any deodorizing action from the residual detergent is a distinct advantage.

[1] Trademark Registered in U.S. Patent Office, Allied Chemical & Dye Corp.
[2] The Antiseptic Properties of the Surface Active Agents, *Oil and Soap*, *22*, 245-249 (1945).
[3] Proceedings of the Scientific Section of the Toilet Goods Assn. Inc., No. 3, June, 1945.

Puritan Constructing New Plant

The Puritan Co., Rochester, N. Y., is constructing a new plant in Rochester at a cost of $350,000.00. The company plans to enter the organic chemistry field.

Paul Mayer in Europe

Paul M. E. Mayer, president of the Mem Co., New York, N. Y., sailed May 31 on the S. S. Mauretania to visit the large European centers, including Vienna, the birthplace of Mem enterprises. It is understood that the Mem soap factory in Vienna is now in perfect condition and ready to receive necessary raw materials. The Mem retail stores in Vienna have been carrying on in spite of widespread destruction in the city. Mr. Mayer was accompanied on his trip by his wife, Mrs. Renee A. Mayer, who is also an official of the company.

Potash Soapers Chicago Meeting

The next meeting of the Potash Soap Association is to be held June 12, at the Morrison Hotel, Chicago, Ill. The meeting is to start promptly at 9:30 A. M. Central DST.

Among subjects which are scheduled for discussion by the Technical Committee are: How and for what purposes are potash soaps being combined successfully with different types of synthetic organic detergents; In what ways are various synthetic organic detergents superior or inferior to potash soaps for customary uses of the latter; Is there a better way of describing our products than by "anhydrous" content; How does the kind of potash soap used affect the coefficient in pine oil disinfectant; How may clarity of product be assured in liquid hand soaps and shampoos; What are the deficiencies in present-day containers (including glass bottles); Are fatty acids cheaper and better than glycerides; Do fractionated coconut fatty acids yield blander shampoos and liquid hand soaps than straight fatty acids or whole oils; Does straight coconut oil or a blend make a better shampoo or liquid hand soap—How may the superiority of one over the other be evaluated?

Export Allocations Announced

The U. S. Department of Agriculture has announced export allocations for 224,000 pounds of neatsfoot oil and 67,200 pounds of lard oil to Belgium in exchange for Belgian Congo palm oil, and 2,835 pounds of toilet soap and 25,000 pounds of stearic acid to India to meet established needs.

Soap Production in Germany

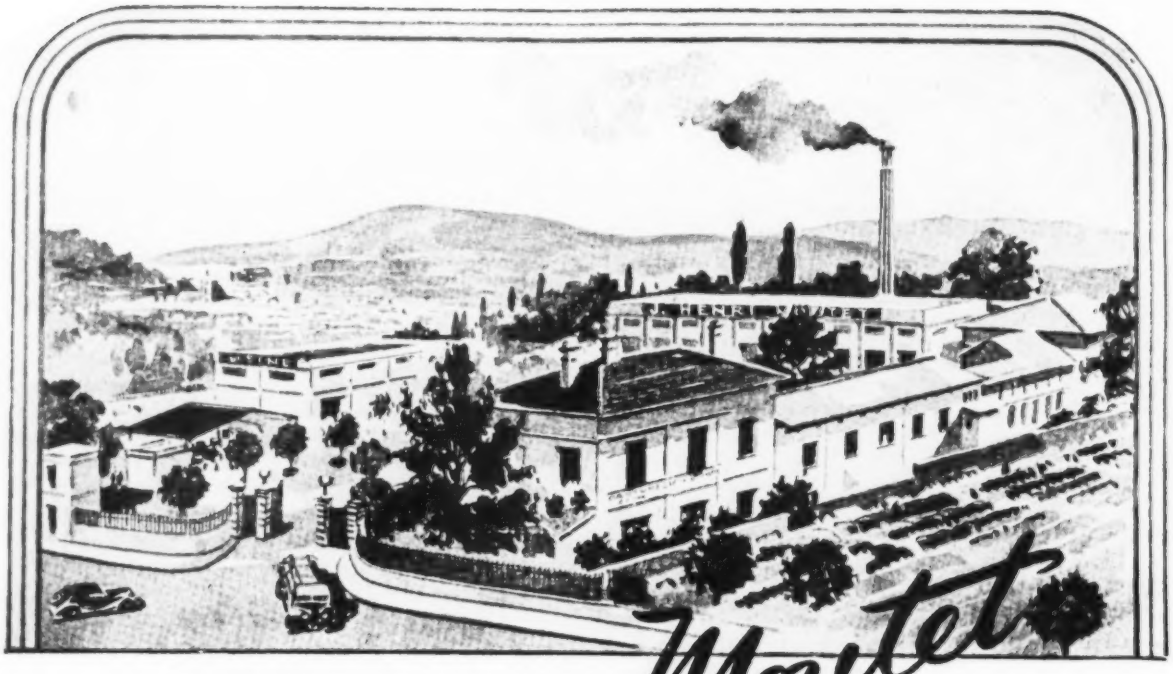
Soap production in Germany is insufficient to meet normal requirements, owing to an extreme shortage of fats and oils. No relief is anticipated until adequate imports of these items can be resumed. Meanwhile, to forestall epidemics which might arise through lack of soap, every effort is being made to collect used fats and to expand the production of synthetic detergents.—*Foreign Commerce.*

Soap Supply Situation Improved

The soap supply situation continued to improve during the first three months of 1947, according to Roscoe C. Edlund, manager of the Association of American Soap and Glycerine Producers.

Mr. Edlund's figures were based on sales reported by 70 manufacturers representing approximately 90 per cent of all soaps made and sold in this country. Total sales in the quarter, not including liquid soaps, reached 678,379,000 pounds. This was 62,022,000 pounds, or 10.1 per cent, more than sales during the first quarter of last year and an increase of 75,413,000 pounds over the fourth quarter of 1946.

Sales of liquid soap during the first quarter of 1947 amounted to 967,655 gallons. A comparison of sales by companies reporting since Jan. 1, 1935, showed an increase of 6.6 per cent for the last quarter over the corresponding quarter in 1946.



J. Henri Moutet

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by ARNOLD KRUCKMAN

ESSENTIAL oils, and other materials and commodities required in the business of the toiletries, cosmetics, and flavors industries, are under the control of the Civil Affairs Division of the Army in the Orient. This division recently appointed George P. Diermier as Section Chief in charge of the affairs connected with drugs and health supplies, which embraces essential oils and the other things of interest to your industry.

CIVIL AFFAIRS DIVISION APPOINTS G. P. DIERMIER

Mr. Diermier left, late in May, for Tokyo, where he becomes part of Gen. MacArthur's civilian staff. His Section is integrated with the Commodity Division of the Civilian Affairs Division. The work of this organization promises to become one of the most interesting adventures of the post-war world. It is setting up a completely controlled economy which is neither communistic, socialistic, fascistic, nor consistent with any of the other formal ideologies of the time, yet is an absolutely authoritarian system, a benevolent paternalism, under the control of the United States and directed by Gen. MacArthur. Its roots, of course, spring from the military control of a conqueror over the conquered. But apparently it tackles its complex problems as new and unique and works out the answers without regard to any pattern except that which applies to the needs of the situation.

Men like Mr. Diermier will find it necessary to devise the formulas for the relations between sellers and buyers; between workers and managers; between investors and producers; and between all of them and the governing agency.

J. G. SCHNITZER TO REPORT ON MID-EUROPE PROSPECTS

An interesting report about over-all conditions and prospects in Middle Europe is expected when Julius G. Schnitzer, Chief of the Textiles (and other commodities) Division of the Department of Commerce, returns from a flying trip which began in early May. Schnitzer is one of the most experienced industrial and commercial experts of the Department. He was sent to survey Germany, and adjacent areas, at the invitation of the Army. His investigation will embrace all the major products used by consumers, including cosmetics, toiletries, and food and beverage products.

The presumption is that this survey may have some bearing on the plan to establish some limited commercial trade with such business as is able to operate in Germany, and its neighboring countries. Schnitzer is expected to return during June.

Another tour of Europe is projected to be made by C. C. Concannon, head of the Drugs and Pharmaceutical Division of the Department of Commerce. It is anticipated Concannon will leave late in June, or during July. His junior in the Division, T. W. Delehanty, also is scheduled to make a trip, either to the Far East, or to South America. Incidentally, the data about the prospects for the trade in South America, which is published frequently, is prepared by Miss Emma D. Schutrumpf, who was formerly the assistant to Lester A. Barber.

The American Consulate General has issued a bulletin advising American businessmen who visit central Italy to make their headquarters in Florence. It has hotel accommodations for a large number of overseas visitors, with rates approximately ranging from $4 to $12.50 a day. There are abundant public restaurants which offer full-course meals at from $2 to $4. Transportation to cities other than Florence is inadequate. Train and bus service is poor, automobile travel difficult, and gasoline is rationed. Gasoline coupons for a limited supply may be had at the American Embassy in Rome. Chauffeurs may be employed at $25 to $50 per month, plus room and board, which must be furnished by the employer.

Latest report announces the Cuban sugar crop will amount to 6,250,000 short tons, 700,000 tons more than the estimate on which the International Emergency Food Council allotments were based, 100,000 tons more than any previous estimate. Department of Agriculture decisions on the date for decontrol will be based on the final size of the Cuban crop, and domestic prospects for the beet crop, and European crops.

On June 1, the Sugar Rationing Administration permits voiding of the 30-day inventory limitation. Industrial users may procure their entire allotment as soon as it is announced. Also, imported sugar-containing products may be used in the manufacture of other products without surrender of ration evidence for the sugar contents of the products imported. This was effective May 7. Further announcement of relaxation of sugar rationing is promised early in June.

On the other hand, world supplies are regarded subnormal.

and it is deemed certain that controls will be continued after the end of next October. The chief reason is the threat to the sugar supply and possible high prices for countries outside of the "dollar" group. It is not regarded as possible that American industrial users will be given an allotment of more than 80 per cent of the 1941 scale. All potential increases are intended for household use. Accurate information about the real supply is not expected to be available until July or later. Sugar users are urged by Government sources to take their supplies now while freight cars are to be had. Later, grains and other seasonal commodities are expected to make their use difficult. Also there will be a huge increase in the movement of freight of all kinds to fill the pipelines to Greece, Turkey, and other foreign relief areas.

The drive by the manufacturers of cough syrups, cough drops, and similar products, for 25 per cent increase in their sugar allotments was unsuccessful. Government explained that sugar shortage will continue, due to the lack of production in the Philippines, and Java. Also domestic crops will have difficulty in transportation. The glut of recent weeks was denominated as purely temporary. President Truman has made clear that he will demand an extension of sugar controls after October 31. The presumption is that sugar must be kept under control until 1950. Beet sugar production is almost negligible in Central Europe, and the Russian output is unknown.

REGISTRATION OF TRADE-MARKS

Whatever the eventual rules may be, the regulations governing registration of trade-marks under the Lanham Act will become effective July 5. A draft of the new rules has been made by the Patent Office. They have been discussed with industry. Public hearings have been held to secure expression of opinion. The final version of the rules is to be ready early in June, and is to be published in June. The pamphlet with the new rules may be obtained by applying to the Trade Mark Division, U. S. Patent Office, Department of Commerce, Washington, D. C. All applications pending on May 1, and thereafter, will be processed under the old rules, unless the applicants file amendments, together with the higher fees.

It is expected there will be particularly heavy response to the provision that the use of a trade mark may be challenged after the mark has been registered for five years. Under the present law, anyone can contest a registration at any time. Under the new law old registrations under the acts of 1905 and 1881 must be republished in the official gazette. The new law also permits two or more claimants to register rights to the same mark for the same goods. Prior users were exclusively entitled to registration under the old law.

The new law recognizes rights of honest users in different sections of the country who have been using identical marks for years. Service marks also become legal under the new law. Service marks may be fixed upon intangibles, such as beauty shop service, dry cleaning, and similar uses. It is held by Government people that the new law will cause many more marks to be registered. The new law permits a mark to have a geographical or descriptive quality. You may claim a mark if you have used it for five years before you apply. Under the new law the user need not be the owner of the mark, thus making it possible for parent companies to register the marks of subsidiaries. As a matter of fact any related company may use a mark it does not own. A mark becomes incontestable after five years, if the user files his application during the sixth year. It is emphasized that reliance upon common law for trade mark protection after July 5 will be hazardous.

The copper tax of 4 cents per pound was suspended by Congressional action, and Presidential approval, in May. This is intended to encourage copper imports until March 31, 1949. There has been a shortage of the metal. Scrap lead recently was brought in in considerable volume from Japan by the U. S. Commercial Company. The world-wide demand for lead, however, causes Washington experts to predict the supply will remain tight until well into 1948. It is pointed out that copper, aluminum, and plastics have made inroads into the field hitherto considered solely the area devoted to lead. Zinc also is reported to be crowded by the competition of plastics, aluminum and other metals.

A recent report by the Department of Commerce suggests that Bermuda may resume production by the enfleurage process of oils from Easter lilies, oleanders, wild jasmine, Passion flowers, jonquils, cedarwood, and Brazilian spice wood. In Jamaica there has been resumption of a small export of sarsaparilla, citrus fruit oils, lemongrass, vetivert, Jamaican rosewood, and the products of some other aromatic plants. From Trinidad, the British are exporting lime oil, and from the Windward Islands they send nutmeg, lime and bay oil. Some citronella, and vetivert, as well as lime oil, is produced in the island of Dominica. Also, gum arabic.

The Department reports a good market in Panama for shaving soap, face and compact powder, cold and vanishing creams, skin lotions, balms, depilatories, perfumes, toilet waters, colognes, and toilet soap. The same cosmetics and toiletries are in demand in Brazil. Belgium also is reported to import most of the talcum, face and compact, powder, used. Apparently most of its men use shaving sticks. There is little use of shaving cream. Turkey is regarded as a good market for dentifrices if importations are authorized. Importation of toilet soap is limited by the same regulations. Talcum powder is not deemed a sound prospect for importation into Turkey. It also is reported that there is little prospect of an early market for toilet soaps in the United Kingdom. The same is true of shaving soaps and dentifrices. There is reported to be a demand for raw talc in the United Kingdom if import exchange restrictions are relaxed.

LEMON POWDER AVAILABLE

Upwards of 2,000,000 12-ounce cans of lemon powder, each capable of making six gallons of beverage, has been offered for sale by the War Assets Administration at 4.3¢ and 4.5¢ per can.

Prices of fats and oils are expected to go down by Fall, according to the Department of Agriculture. Imports of fats and oils are expected to be measurably larger.

From British sources the Department of Commerce has a report outlining a continuous method for concentrating fruit and vegetable juices by freezing out some of the water content. It is called the Krause-Linde process, and is regarded as an outstanding development in food processing. The process is described in a 160-page booklet which may be obtained from the Office of Technical Services, Department of Commerce, Washington 25, D. C.

NEW PRODUCTS AND PROCESSES

New Solvent

Methylal, a diether, will be made available to the chemical market in large quantities for the first time, according to an announcement from Celanese Chemical Corp.

With a boiling point of 42 deg. C., methylal is said to be an excellent solvent comparable to ether and acetone for certain applications. This chemical has, it is stated, high solvency for many resins, as well as for a wide group of organic compounds. Its low boiling point, its relatively high water solubility, its ability to be salted out of solution and its stability toward alkalies point to its use as a vaporizing, extraction or reaction solvent in many industrial uses.

Protective Coated Labels

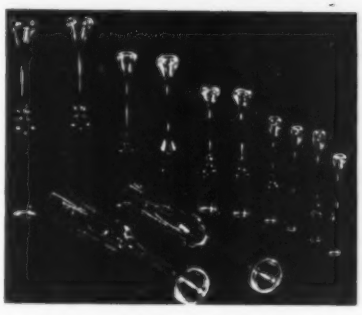
A new, all-purpose labeling and protective coating adhesive, developed during the war by National Adhesives, is now available for peacetime industrial application. Known as Resyn Adhesive Q3605, the product offers all-weather identification, and is applicable to wood, fibre, tin, painted steel and glass.

Water Treatment Machine

A new water treatment machine which combines mixing of chemicals with raw water, turbidity removal, and storage of treated water, all in one unit has been developed by The Permutit Co. The machine, called The Permutit Three-Stage Precipitator, may be used for removal of turbidity and color alone, or as a combination de-alkalizer and turbidity remover. During either process the water is sterilized. Copies of a booklet describing the three-step machine may be obtained from the company.

New Ampul Design

An ampul of new design has been developed by Kimble Glass Division of Owens-Illinois Glass Co., Vineland, N. J., in an effort to eliminate particles due to chipping. Known as the Tuf-Top ampul, it is characterized by a large flaring opening, thoroughly fire-finished. Tests under conditions of actual use have shown that the resulting comparatively heavy glazed rim is highly resistant to chipping.



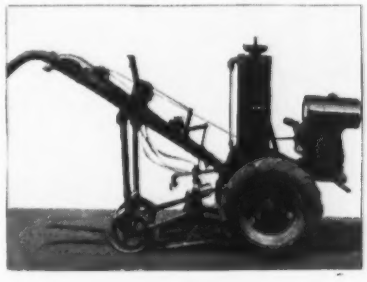
Tuf-Top ampul

Maintenance Cleaner Announced

A new general purpose inorganic cleaner, designed for maintenance work, has been announced by Pennsylvania Salt Manufacturing Co. The new cleaner, designated Pennsalt MC-1, is a dry, granular inorganic material that dissolves rapidly in water, removes most types of soil easily and rinses rapidly.

Soil Fumigation Applicator

The Insecticide Division of Innis, Speiden & Co., 117 Liberty St., New York., has announced the development of a new and improved soil applicator designed specifically for the rapid and complete application of Larvacide, tear gas fumigant, in soil fumigation work. The new applicator, the company has announced, is in the process of manufacture and will be available to the trade shortly.



New applicator

Gum Benzoin Siam

Schimmel & Co., 601 West 26 St., New York, N. Y., has announced the arrival of a substantial shipment of gum benzoin Siam. The material is said to be of exceptionally fine quality.

New Catalogs

A new booklet, "Organic Chlorine Compounds," presenting the latest data on twelve chlorinated compounds, industrially important as solvents, fumigants, and chemical intermediates, has been published by Carbide and Carbon Chemicals Corp. It is one of a series of publications on the various groups of aliphatic organic chemicals.

Information is given on the properties and uses, specifications, solubilities, comparative stability to reducing and oxidizing agents, and constant boiling mixtures. The booklet also contains charts showing the variation of certain properties with respect to temperature.

Copies may be obtained by asking for Form 4769.

Innis, Speiden & Co., 117 Liberty St., New York, N. Y., has just brought out a new issue of the ISCO News.

The latest issue of the Fritzbro Reporter, published by Fritzsche Brothers, Inc., 76 Ninth Ave., New York, N. Y., has been published. Copies may be obtained without charge.

The Bibliography of Scientific and Industrial Reports, published weekly by the Office of Technical Services, Department of Commerce, has been expanded to include 1,500 new abstracts of technical reports in each issue. The number of abstracts is now twice that printed in earlier issues. Orders for the reports should be addressed to the Superintendent of Documents, Washington 25, D. C. The year's subscription rate is $10.00.

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A compendium of significant news and views

Harold Hutchins says . . .

A WEIGHTY PROBLEM

Some doctors are telling the overweight patients, without gland trouble, that they have something on the mind, and the only relief is stuffing with food. May be just another variation of the reasons offered for the guy who drinks—a food jag. And we always thought fat people were so good natured and free of trouble. They always seem to laugh well, or we at least imagine they do.

FAITHFUL SERVANT

While you are celebrating July 4th, give a thought to Dr. Louis Schwartz, Chief of the Division of Industrial Health in Dermatology, who will resign on that day from the United States Public Health Service. This man built his section from scratch, and we mean scratch! He has always been a help to everybody in the cosmetic and pharmaceutical business. He was kind, fair and willing to try—never pre-judging. He will be greatly missed from his official station. Incidentally, the number of certified dermatologists of the American Board is 844.

100 YEARS AGO

While we think of it, 1847 was the year in which the American Medical Association and the New York Academy of Medicine were founded—James Marion Sims performed his perfected operation to reduce the suffering and humiliation of countless thousands of women, regarded as hopeless by the master surgeons of Europe and America—James Simpson gave women in child-birth the blessing of anethesia, first with ether and later, in the same year, chloroform! Just how do these things reach these pages, anyway? What we are getting at is this—What is the cosmetic industry doing about preserving its records, so that in 2047, some future publication in the perfumery field will note the progress made by us in 1947?

GREAT REFORMER

We were reading the other day about America's greatest reformer of the 19th Century. She was Dorothea Lynde Dix—a New England school mistress. She became interested in the plight of the mentally ill that were kept in jails and almshouses. She started a one-woman crusade and, before she was through, conditions of the unfortunates throughout the world had changed. Funny, she died in a room reserved for her in the Administration Building of one of the first planned and built insane asylums, at Trenton, N. J., at the ripe old age of 85. That was in 1887.

DERMATOLOGIC Rx MATTERS

The June 5th meeting of the New York Branch of the American Pharmaceutical Association held at the Columbia University College of Pharmacy, was addressed by Herman Goodman, M.D., on the subject of dermatologic prescription writing. The learned doctor included many items that are classed as cosmetic materials.

HOW ABOUT THE PAYROLL?

There is much talk nowadays about combining the various related city bureaus under one head. The Health, Hospitals and welfare would make one combination, while the Police, Fire and Sanitation would make a second. One Medical Department for all city departments is also suggested. Probably one Pharmacy Board, etc., etc. Seems like a good idea, but we wonder how it affects the payroll?

OLD-TIMERS' QUIZ

Do any old-timers recall the late Frederic Sylvestre Mason, M.D.? He was a pioneer in vitamins; also in sulfonamides; also in cosmetics. As a matter of fact, he produced and sponsored the Mary Garden Parfum, sometime before the first World War—about 1915.

HISTORY MINDED?

And while we are history minded, this month, do you know who was the founder of the volunteer fire departments in this country? Well, many say it was, ah yes, the first civilized American—Benjamin Franklin. What a man! Please re-read his biography?

FASHION FAIR

Cosmetic manufacturers were well represented at the Fashion Fair, held at Madison Square Garden, June 12 through 21, as a result of the removal of war-time restrictions and the fashion industry lending itself to such dramatization that it resolved itself down to a vital stimulant to business. As a matter of fact, there were many tie-ups between manufacturers exhibiting at the Fair and retail stores.

ALCOHOL COSTS CUT 67 PER CENT

A new process for making alcohol from corn and other grains at 26c. a gallon—a third of the cost of making alcohol by fermentation processes—was described last month before the Salesmen's Association of the American Chemical Industry at its meeting in the Hotel Roosevelt. Production of the product has been carried through the pilot-plant stages at a $75,000 installation at Lincoln, Neb., with Dow Chemical, Reichhold Chemicals, and others financially interested in the project.

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ZIPPER RINGBINDER

14" x 10"—3-ring 1" binder. Made in smooth top grain cowhide in suntan, british-brown or black, hand turned edges, three piece cover. One gusseted and three flat pockets in simulated leather.

*ADVERTISING CORPORATION

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16" x 13" and 18" x 14"—Made in top grain smooth cowhide in natural, suntan, british-brown or black. Frame style, post handle and extension lock, steel reinforced, drop bottom, two partitions, polished edges.

UNDERARM CASE

16" x 12"—Made in top grain smooth cowhide in natural, suntan, british-brown or black, three way zipper, hand turned edges. Two full length pockets with gussets in simulated leather. Identification-card pocket and loop for pencil.

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There's not a business man in the world who wouldn't be glad to own and use one of these handsome leather cases. The very sight of it spells *character, quality* and *prosperity*.

These *ACA leather cases are just the thing for your sales staff—wonderful for sales contest and bonus prizes, convention gifts and good-will builders.

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STURGE'S CHALK
"Extra Light"—"Dense"

LANOLIN
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PRODUCTIVITY IS KEY

Backing up manpower with machine power is the secret of America's spectacular achievements in both wartime and peacetime production, says the Twentieth Century Fund's new survey of "America's Needs and Resources," which shows that in 1944 we turned out nearly 27 times as much in goods and services as we did in 1850, with a labor force only 8½ times as large, but using 343 times as much mechanical energy in doing so. "Productivity is the key to future welfare," says Dr. J. Frederic Dewhurst, Economist of the Fund.

THE RIGHT TO WORK

Fair rules and fair play applied to everybody constitutes the only solution to the nation's labor troubles. Specific application of those rules would remove the restrictions that now shackle the worker's freedom to work. The right to work should no more be decided on a partisan basis than should the determination to go to war when the nation is menaced by aggression from the outside. Curtailment of the right to work through the monopolistic power acquired by labor unions over the past 15 years is the most serious threat to our liberties today. It amounts to internal aggression against the most valuable economic right of every American.

ANYTHING ELSE?

If you think you are bothered by Washington, consider the poor ice cream makers! While trying to make a living, ice cream makers in Idaho are asked to tell, on questionnaires sent out by the Federal Government, how many raspberry sherbets they make each year; candy makers, elsewhere, how many jelly beans they make; girdle makers the detailed sizes, shapes of their product, and whether they are the two-way stretch or roll-on kinds.

CHECKS LIPSTICK COLORS

Automatons of electrical science and manufacturing have made simple what used to be quite an assignment —color analyzing, detecting and matching, and color making. One of these interesting instruments is a color maker, which is a portable device that electrically blends primary colors in various intensities and can produce on its screen any shade in the visible light spectrum. Designed as an aid to lecturers, such as at fashion shows, and to teachers, the device may also be used by clerks to identify the precise shading of an exact customer. Say you want to match something in robins-egg blue, or chrysoprase green, or pyrethrum yellow, or just fluorite violet, and you'd left the sample at home. Or you're only "shopping around" for that "certain effect." The clerk simply flips a switch, various shades appear on the color maker's screen and you make your selection. But, even more versatile is the analyzer. Its scope also includes predicting the color of orchids before they bloom; telling good oysters from bad ones; analyzing lipstick colors in crime detection; determining for Hollywood what colors are most photogenic for technicolor motion pictures; investigating for laundries how much soaping certain fabrics can stand without fading, and a host of other uses. Incidentally, the analyzer's creators point out that it is "mathematically capable" of "putting its finger" on at least a bigintillion shades, plus a lot of decillions.

SMALL, BUT MIGHTY

A 75-watt infrared lamp, the rays of which are powerful enough to light a cigarette held a half-inch away, has been developed for special heating and drying processes in industry.

AN INTERESTING SCORE

Most any time an argument can be stirred up among good friends over just how highly developed each individual sense of taste or smell is concerned. As a matter of fact, the food experts aren't much better than some of the perfume experts, as was shown recently in New York City when a manufacturer of margarine held a blind comparison test among food editors of Metropolitan newspapers one day, and with food editors of national magazines the following day. Two luncheons were served, with all food prepared in sets of three with margarine, butter and the vegetable shortening. When the tallies were added at the end of the second luncheon, margarine had won the first day by a score of 47 to 45, with butter leading the next day by a narrow margin of 53 to 48. Now, would some of you perfume sniffers care to make a bet in the face of these tests by the food experts?

STRETCHING IT

American rubber manufacturers continued their record-breaking consumption of raw materials in March, running use of crude rubber to a new quarterly peak of 296,818 tons.

TAX REDUCTION WELCOME

Because half the earnings of the average corporation are taken in taxes to pay the cost of government, it should be borne in mind that a reduction in taxes would be the most effective method of enabling manufacturers to reduce prices, according to a recent statement by Henry H. Heimann, Executive Manager of the National Association of Credit Men. Prices, he declares, have advanced too fast in the past few months and any effort to reduce prices consistent with a reasonable return on a business investment is a sound movement.

LEVER CUTS PRICES

Responding to President Truman's appeal for reduction of prices, Lever Brothers Co. cut prices on all its major soap products by 10 per cent, including Lux Toilet Soap, Lux Flakes, Rinso, Lifebuoy and Swan, while the price of glycerine was also reduced by approximately 10 per cent.

CONDITIONS ABROAD

"English cosmetic manufacturers are still operating under great difficulties and many government restrictions. Advertising is reduced to a minimum and cosmetic ads are allocated to small business card type of space," reports J. C. Gambles, Chairman of the Board and Managing Director of Peggy Sage Ltd., London, during his recent visit to this country.

SMALL TOWNS IMPORTANT

The importance to producers of merchandise and distributors of small towns and cities, which account for 45 per cent of all retail sales, was demonstrated last month in Stroudsburg and East Stroudsburg, Pa., during Pathfinder Week, when more than 150 manufacturers and distributors of branded goods cooperated with merchants of the twin communities, in a test of the market for their product in Main Street trading areas, as well as to the people of the towns.

ADDRESSES STUDENTS

Product development in the petroleum chemical field was the subject of a talk recently given by R. W. Kixmiller, Director, Product Development Department of Celanese Chemical Corp., a division of Celanese Corporation of America, before the student section of the A.I.C.H.E. at the City College of New York. The talk was one of a series by men in the industry, designed to put the students in closer touch with industrial developments and techniques.

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"ONE WOMAN—ONE PERFUME"

Mme. Raymond Barbas, sister of the late Jean Patou, famous couturier and perfumer, with her daughter, Kiki, recently were guests of honor at a small reception held at New York's "21" Club. Speaking in French, which was interpreted by her husband, Raymond Barbas, Director of the House of Patou, she advised women everywhere to choose the scent that best reflects her personality and stick to it. To be effective, the same fragrance must be worn all the time, she added.

OPEN NEW PLANT

A modern new Hercules Powder Co. plant, for the manufacture of chemicals for the paint, varnish, lacquer, adhesive and other industries, was recently officially opened at Burlington, N. J., by Dr. W. M. Billing, General Manager of the Synthetics Department.

NEW RESIN PLANT

General Electric Co. formally opened at Anaheim, Cal., its new resin manufacturing plant which was designed and built by the Chemical Plants Division of Blaw-Knox Co. This is the first large West Coast plant devoted exclusively to the manufacture of alkyd resins, and its products will be shipped by tank cars, tank trucks or drums to West Coast industrial users, other G.E. plants, and to the export trade.

FTC ACTIVE

Resuming its peacetime function of collecting, summarizing and analyzing the financial operating statements of American manufacturing corporations, the Federal Trade Commission has mailed reports to 8500 concerns requesting them to file brief profit and loss statements and balance sheets for the three months' operation ending within the first quarter of 1947.

THERAPEUTIC RESEARCH

The members of the Federal Agencies have stated that certain drugs were not effective and that others, if used in quantities to be effective, may be dangerous when used as directed. The medical literature concerning the toxicity and the therapeutic effects of these particular substances was confused and, in addition, the manufacturer of products containing the drugs did not have evidence available to substantiate the claims they were making. Therefore, we have seen a number of ingredients disappear from the market. Many of these drugs were used on the basis of empiricism. It is contended by many that they were therapeutically effective and not dangerous to public health, if properly used. Hence, the need for research on the basic ingredients, to determine their toxicity and therapeutic effects, so as to remove the confusion that now exists. To this end, The Therapeutic Research Foundation, Inc., has been formed. It is a non-profit group, representing all branches of the industry, and is now ready to assist all members of same. Requests for further information should be addressed to Dr. Russell A. Cain, President and Scientific Director, 1809 Buttonwood Street, Philadelphia 30, Pa.

DCAT MEETING

The future of American drug and chemical exports will be discussed by Earl I. McClintock, President of Winthrop Products, Inc., at the Spring Luncheon Meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, at its June 25 meeting at the Hotel Pennsylvania.

SPEAKS HIS PIECE

In an article appearing in *American Magazine*, published last month, Victor Vito of New York City expressed some very frank opinions about hair-dressing, in telling what he has learned about women in his years of hair-styling. For example, he says that women need not spend nearly as much money and time on hairdressers as they do, if they would take more care of their hair themselves. He also accuses some hairdressers of not selling a hair-do that a woman can fix up at home, among other complaints.

MAX FACTOR ELECTS

Directors of Max Factor & Co. have elected Davis Factor to Chairman of the Board; Michael Harris, Jack Mier and Leonard Matchan as vice presidents; Leon H. Levy as secretary; Haskell W. Kramer and Maurie R. Chez as directors. All other officers and directors were re-elected.

NEW ACCOUNTING METHOD

A radically new, yet basically simple system of accounts receivable control is dramatically and dynamically presented in the new twenty-minute, full color, sound motion picture "Saving With Suiap," released recently by the Systems Division of Remington-Rand, Inc.

GLAMOUR MAGAZINE SURVEY

With the cooperation of Miss Ann Delafield, Director of the DuBarry Success School, *Glamour Magazine* recently conducted a survey to see how a girl of average looks could be made into a distinctive beauty and, at the same time, continue her regular work-a-day schedule. Helen Van Slyke, Beauty Editor of *Glamour*, was responsible for the project. The results can be seen in the May issue of their magazine.

THE RIGHT PLASTIC

Because they were convinced of the importance of the selection of the right plastic for every job, the recent exhibit of Celanese Plastics Corp. at the Second National Plastics Exposition was planned to prove that principle. Next to each of the products displayed, there was a list of the specific qualities required for its performance. Many of these products have been made from Celanese Plastics, over periods ranging from 20 to 70 years.

X-RAY COURSE GIVEN

Eighty technicians attended the special one-week course in X-ray Differentiation and Spectrometry recently conducted by North American Phillips Co., Inc., in its New York Auditorium. Lectures were delivered daily by outstanding authorities, with afternoon sessions devoted to laboratory work.

LADY KAY CARRIES MILWAUKEE

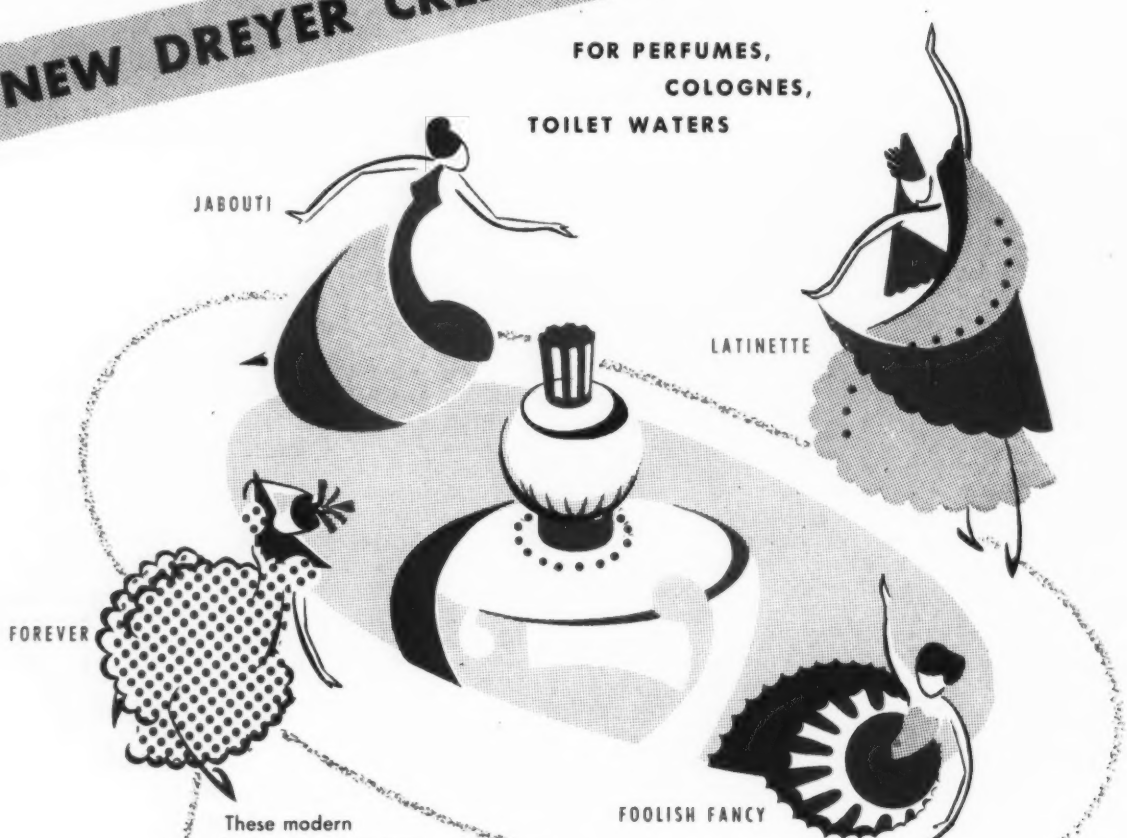
A beauty parlor brand, Lady Kay, is favored over 51 other brands of cream shampoo by families in the Greater Milwaukee area, the 1947 *Milwaukee Journal* Consumer Analysis disclosed recently. The product is made by Koehler & Koehler. According to the study, one out of four of the 233,500 Milwaukee families buys cream shampoo, and approximately 86 per cent of sales in this market are made by the nine leading brands. The only one to rank higher than Lady Kay was Lustre Creme, with 99 per cent drug and department store distribution. Rayve, the third leading brand, also had broad distribution.

ASEC MEETS

The American Society of European Chemists and Pharmacists met last month at the Master Institute, in New York, to hear a lecture by Dr. Walter G. Frankenburg, former associate of Professor A. Mittasch, and now connected with the research laboratory of General Cigar Co., Lancaster, Pa., on the subject of "The Present State of Catalysts."

NEW DREYER CREATIONS . . .

FOR PERFUMES,
COLOGNES,
TOILET WATERS



These modern Dreyer scents go 'way beyond nature . . . they are artistic creations suited to people and to moods. The Dreyer Perfume Stylist has created an unusually interesting new group of scents — extenders — volatiles and bases to help you develop an exclusive line designed to capture the imagination of a more discriminating quality and price conscious public.

JABOUTI . . . a well balanced floral bouquet with aldehyde topnote and a slight oriental persistance.

LATINETTE . . . an excellent Oriental type with a refreshing citrus topnote.

FOOLISH FANCY . . . an attractive and popular modern bouquet—well balanced and well fixed.

FOREVER . . a tenacious, floral bouquet of sweet pea, gardenia and Jasmine.

OTHERS . . originally Dreyer's, developed in our own laboratory along popular American lines, at interesting prices.

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BOSTON . . HAROLD H. BLOOMFIELD
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LOS ANGELES . . ALBERT ALBEK, Inc
PHILADELPHIA . . . . . R. PELTZ CO.

THOMPSON-HAYWARD CHEMICAL CO.
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AND CITIES THROUGHOUT MIDDLEWEST
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PERFUME COMPOUNDS • FLAVORS

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PERFUMED SHOWERS

Now comes a new plastic gadget, Aqua Scent, which is an attachment for perfuming your shower bath. A scented tablet is fed into the slot of a plastic container for each shower. Gimbel's in New York are reported to have already introduced the product with considerable success. The attachment, with enough tablets for twenty showers, sells for under $3, it is reported, and a tablet lasts the length of an average shower—just seven minutes.

MODERNIZATION SHOW

The first conference for retailers, devoted exclusively to the subject of store modernization, will be conducted at Grand Central Palace, New York, July 7 to 12. Clinics will be held on lighting, layout, use of materials, customer comfort, display, fixtures and store fronts.

"TRU-SPOON"

Accurate measurement of the dosage requirements of patients, often made difficult by the fact that there are something like 29 different sizes of teaspoons, is provided by Owens-Illinois Glass Co. who have introduced a new plastic medicinal teaspoon of clear, transparent polystyrene. It is intended for distribution by pharmacists in connection with the sale of prescriptions.

A.C.C.L. MEETS

The American Council of Commercial Laboratories held its Fifteenth Meeting at the Hotel Ambassador, Los Angeles, May 26 and 27. The agenda included discussions on items relating to safeguarding and raising professional standards, the unfair advantage enjoyed by tax-favored institutions who compete with independent laboratories, and a symposium on methods and policies of presenting laboratory service to clients.

DISTRIBUTION COST STUDY

A distribution cost accounting system is being set up for health supplies at the wholesale level, as a result of research studies on wholesale drug handling costs undertaken during the past two years for the National Wholesale Druggists' Association by Prof. H. J. Ostlund, University of Minnesota School of Business.

"JEFF SNIDER DAY"

The regular monthly meeting of the Allied Drug and Cosmetic Association of Michigan was held May 27, at the Birmingham Country Club, was given over to do honor to one of its members, Jeff Snider, who has been transferred to Louisville, Ky.

WHEN IS EFFICIENCY?

A Soviet economic magazine revealed recently that it takes 480 persons to run a certain plant in Siberia, where they produce about the same amount of electricity as is generated at a 51-employee plant in South Amboy, N. J.

EXIT STUFFY NOSES

A new volatile vasoconstrictor, with as yet only a chemical name, is described in a recent issue of the *Journal of Pharmacology and Experimental Therapeutics* as promising relief, without "jitters," for cold patients with stuffy noses, according to authors of the paper, Dr. A. M. Lands, Director of Pharmaceutical Research, Frederick Stearns & Co. Division, Sterling Drug, Inc., and his co-workers.

SOYBEAN INTEREST GROWS

The soybean, a crop adopted from the Orient, has made such a good name for itself in the United States that 50 scientists from 20 foreign countries have journeyed during the past two years to confer with Department of Agriculture officials at Beltsville, Md.

PENNSALT ACTIVE

Recent developments at the Pennsylvania Salt Manufacturing Co. include a $3,500,000 power improvement at its Wyandotte, Mich., plant; the introduction of a new DDT mothproofing process, called "Arresto-Moth," formerly known as "Errusto-moth," and the announcement of "Pennclean," a new product for the removal of milkstone from dairy utensils and dairy plant equipment.

PREP SHAVE EXPANDS

Two new sections of the Mark Allen Co. Prep Shave Cream plant in Detroit will soon be completed, tripling present capacity. The company had also been converted from a partnership to a corporation.

NEW SHOWROOM

The House of Rigaud recently announced the opening of a permanent exhibit and sales office for wholesale business in the Peikin Galleries on the second floor of the Hotel Gotham in New York. Toilet goods buyers are cordially invited to make this spot their headquarters when in Manhattan.

NEW COLOR CHART

The Charles Marchand Co. has introduced a new color chart that is novel and full of interest for customers and dealers. The chart clarifies, in a very simple manner, the broader purposes of their rinses, and illustrates the manner in which the various effects, aggressively promoted through Marchand advertising, may be obtained through the use of their rinses. Charts are distributed gratis to drug stores, upon request.

"COMMITS SUICIDE"

A reduced form of streptomycin, known as dihydrostreptomycin, says John Hays Bailey of Sterling-Winthrop Research Institute, is so effective as a germ-killer, that live bacteria commit suicide when they come in contact with it.

NEW LIQUID FACIAL

Evilya Liquapak is the name of a new liquid facial that actually replaces the old-fashioned mud pack. It is manufactured and sold by Spooner, Inc., New York. Product is reported to cleanse thoroughly, effectively and quickly. Just apply, relax and wash off.

MONSANTO EARNINGS

Monsanto Chemical Co.'s net income for the first quarter of 1947, after a provision of $500,000 for relief of the company's Texas City employees, amounted to $4,944,502. Edgar M. Queeny, Chairman of the Board, recently announced in his quarterly report to stockholders. This represents a 47 per cent increase over the corresponding period in 1946.

FACTOR PROFITS UP

Max Factor & Co. reports for the year ended December 31, 1946, total sales of $16,071,728, with net profits of $2,070,525. Net per share on the 2,200,000 common shares outstanding was listed at 94c.

BRISTOL-MYERS EARNINGS

For the three months ended March 31, 1947, the net earnings of Bristol-Myers Co. and its domestic and Canadian subsidiaries amounted to $1,448,961 after all charges, reserves and a provision of $1,008,068 with respect to Federal and Canadian taxes on income.

CANADIAN EXPANSION

Monsanto Chemical Co. has announced plans for the $11,000,000 financing of an expansion program by Monsanto Chemicals, Ltd., the British subsidiary of Monsanto.

One Year Old - - -

- - - yet behind this new business is the experience of 37 years — over three decades since Dr. Alexander Katz entered the essential oil, flavoring, and perfume materials business which was a continuation of the business established by his father in 1876. The new business, which is managed by an experienced and competent staff who have been connected with Dr. Katz for many years, is growing rapidly. It is well out of the embryo stage, and entering its second year with excellent production facilities and control laboratories to successfully meet the requirements of the trade.

The entire organization is grateful to its friends for the splendid support given during the first year.

Our Research Laboratory Is At Your Service

DR. ALEXANDER KATZ & CO. 4641-43 HOLLYWOOD BOULEVARD. LOS ANGELES 27, CALIF.
948 HOWARD STREET, SAN FRANCISCO 3, CALIFORNIA

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NEWS . . . Harold Hutchins Says . . . VIEWS

LONGER VACATIONS

Three and four-week vacations will be granted to employees for long periods of service with the Mathieson Alkali Works, according to a recent announcement by George W. Dolan, President of the company. More than one-third of their employees will benefit from the new plan, it is asserted.

LENTHERIC SELLS FACTORY

The Queens, Long Island, plant and ground of Lentheric has been sold to the Mutual Life Insurance Company of New York for $1,875,000. Immediately, thereafter, it was leased back to E. R. Squibb & Sons, parent concern of Lentheric, for a period of 25 years, with further stipulations for renewing the lease.

HEYDEN REPORTS

The Heyden Chemical Corp. reported gross sales of $5,923,853.85 and net income after taxes of $766,874.79 for the first quarter of 1947, compared with gross sales of $5,389,823.92 and net income of $910,874.94 for the same period in 1946. The first quarter 1947 gross sales figure includes the sales of the Nyal Co., nationwide drug distributing firm.

PENICK PLACES ISSUE

S. B. Penick & Co. has announced the placement with an institutional investor of $1,960,000 of its 3¼ per cent sinking fund debentures due 1967.

STERLING DRUG ZOOMS

Sales of Sterling Drug, Inc., for the first quarter of 1947, the highest for any quarter in the company's history, were $33,800,000. This represents an 11 per cent increase over the corresponding period last year.

E. R. SQUIBB PROFITS

Consolidated net income of E. R. Squibb & Sons and wholly-owned subsidiaries in the Western Hemisphere for the nine months ended March 31, 1947, was $4,104,062, compared with $3,428,585 for the corresponding period a year ago.

PENNSALT'S DIVIDEND

Pennsylvania Salt Manufacturing Co. recently declared a dividend of 60c. per share on the $10 par value capital stock, payable June 14.

PURELY PERSONAL

KENNETH A. BONHAM, President of Emerson Drug Co., was recently re-elected President of the Proprietary Association, at its Annual Convention in Atlantic City.

ELIZABETH ARDEN announces the promotion of RALPH P. LEWIS, her present Sales Manager, to Vice President and Sales Manager.

DR. LESTER A. PRATT, General Sales Manager of Monsanto's Merrimac Division, has been appointed assistant to the division General Manager.

F. A. ABBIATI, General Sales Manager of Monsanto's Springfield, Mass., plastics division, has been appointed assistant general manager of the division.

WILLIAM Y. PREYER, President of Vick Chemical Co., has been named Chairman of the Drugs Division of the 1947 Campaign of the New York City Cancer Committee.

ELIAS D. COHEN and N. A. McMANUS, both Vice Presidents of National Starch Products, Inc., were presented with 45-year pins at a recent staff meeting of the concern.

OIL ORRIS ROOT LIQUID ABSOLUTE

ORRIS CONCRETE

ORRIS OLEORESIN *(Resinoid)*

Experience demonstrates that none of the substitutes for Orris are wholly satisfactory in giving the characteristic Orris note. It is therefore fortunate that these well known Bush specialties are now readily available.

W. J. BUSH & CO., Inc.

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LINDEN, N. J. **NATIONAL CITY, CAL.**

LONDON **MITCHAM** **WIDNES**

The Product of a good Craftsman needs no recommendation.

He who knows how to produce **BEAUTY** will have people seeking his door. The Diaphanous thing of moonshine we call **PERFUME** has the Power to stir the Soul. The Caravans that trailed into Damascus and Samarcand live in song and story, not because they carried woolen threads woven together — but because they brought **BEAUTY**.

The Nucleus and Essence of that quality of Perfection is found in

DEVOTION

Sweetest the strain — when in the Song
the singer has been lost

We humbly submit this FRAGRANCE for the delight and inspiration of the Understanding in Heart.

SPARHAWK CO.

Be not like the stream that brawls
Loud with shallow waterfalls,
But in quiet self control
Link together Soul with Soul

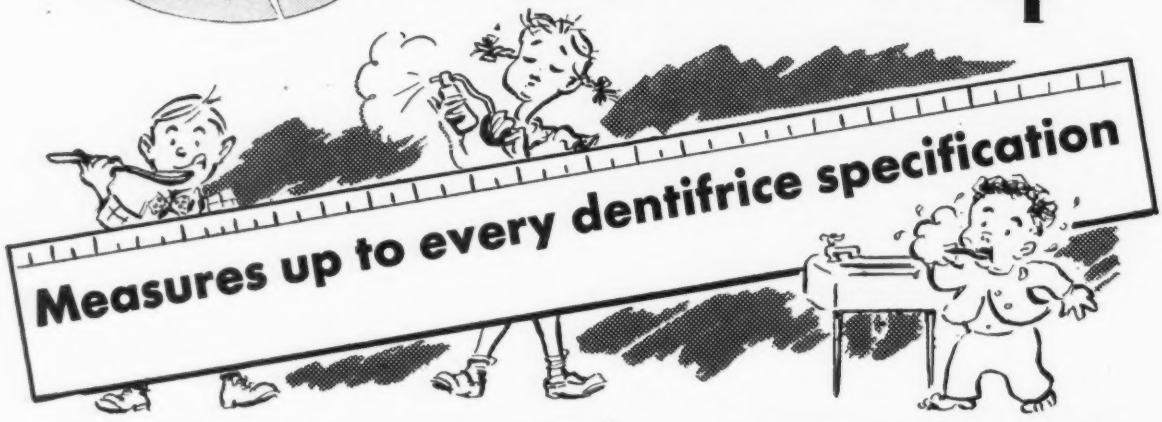
Longfellow

When from the censor clouds of fragrance roll
And swelling organs lift the rising soul
One thought of thee puts all the pomp to flight
Priests, tapers, temples swim before my sight.

Alexander Pope

POWCO BRAND
REG. U.S. PAT. OFF.

Neutral Soap



NO TASTE NO ODOR PLENTY OF FOAM

Modern production methods and close selling margins make it possible for you to buy standardized, air-floated POWCO BRAND Pulverized Neutral Soap to suit your needs of better quality at a saving. Write today for your generous sample stating the use for which intended.

John Powell & Co., Inc. · One Park Avenue, New York 16, N. Y.

NEWS . . . Harold Hutchins Says . . . VIEWS

DR. HERMAN C. NOLEN, Professor of Marketing at Ohio State University, has been appointed Vice President of McKesson & Robbins, Inc., in charge of drug buying policies.

RAY A. WEBER has been appointed Sales Promotion Manager for the Pepsodent Division of Lever Brothers.

ROBERT P. BEAVEN has been appointed to the Technical Service staff of the Rumford Chemical Works, Rumford, R. I.

IVAN V. WILSON has been named assistant director of research for the Monsanto Merrimac division.

DR. CHRISTIAN V. HOLLAND has been placed in charge of coordinating all manufacturing facilities of Sterling Drug, Inc.

H. WEBSTER STULL has been named Director of Personnel by the Mathieson Alkali Works.

ROY L. MURPHEY, Assistant Sales Manager of Bourjois, Inc., and Barbara Gould, Inc., has become General Sales Manager of the T. J. Holmes Co., Chartley, Mass., manufacturers of atomizers.

JACK KRIEGER has been appointed to the sales staff of the Special Chemicals Division of Winthrop Chemical Co.

F. M. DEAKINS has been named assistant to R. E. Gray, Sales Manager of the Centaur Co. Div., Sterling Drug, Inc.

ED. W. DINGMAN, new standard bearer on the West Coast for Dermetics, is the tallest salesman in the cosmetic business—6ft. 7¼ in.

J. C. RUSSELL and R. D. TREZISE have been appointed staff members at the Whitemarsh Research Laboratories, Phila., Pa.

JACOB S. DISSTON, JR., becomes President of Henry Disston & Sons, manufacturers of quality steels and cutting tools.

JOSEPH D. BOHEN, 41, Vice President of Sterling Drug, Inc., in charge of its Centaur Co. division, recently died at Atlantic City after being stricken while attending the Annual Convention of the Proprietary Association which met there.

CHARLES R. LACHMAN, cofounder and Vice President of Revlon Products, was recently married to Ruth Mabee Wormhoudt, widely known in West Coast musical circles.

DR. FRED L. HUMOLLER, formerly Associate Professor of Biological Chemistry at Loyola University School of Medicine, has been appointed Assistant Director of Research for Raymond Laboratories, a divion of the William R. Warner Co.

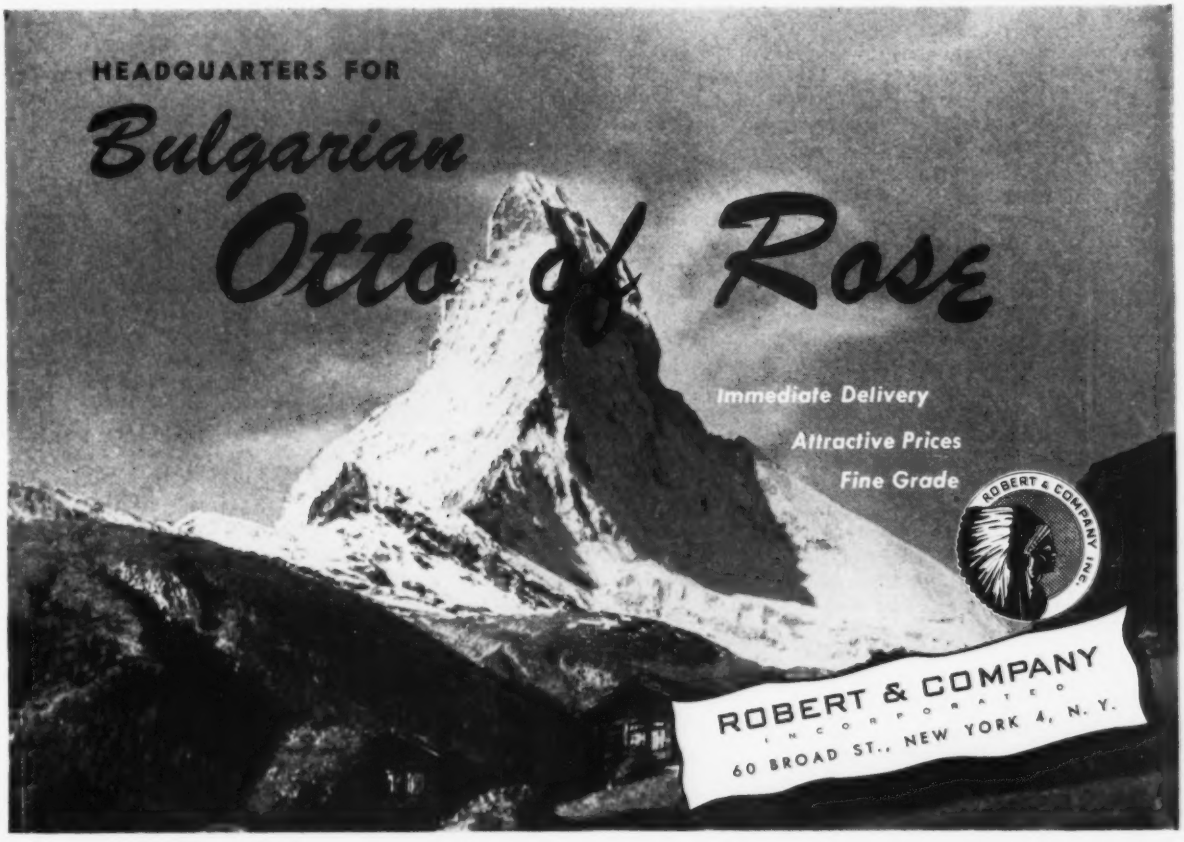
DANIEL S. DINSMOOR, Vice President of Monsanto Chemical Co., has resigned to enter the chemical consulting profession.

LES PARFUMS de DANA, INC., are now located in new quarters at 16-18 West 60th St., New York City.

FIVE DAY LABORATORIES, INC., announces immediate delivery on the new Five Day Underarm Pads for volume summer selling.

ABBOTT LABORATORIES has been elected to membership in the National Vitamin Foundation.

DR. CORNELIA T. SNELL of Foster D. Snell, Inc., gave the annual Marie Curie lecture at Pennsylvania State College last month.



THE ROUND TABLE –

Interest Centers Around "Proportionally Equal" at F.T.C. Meeting

In opening the trade practice conference for the cosmetics industry, held May 12 and 13, at the Waldorf-Astoria Hotel, New York, N. Y., Federal Trade Commissioner Robert E. Freer said: There are two classes of trade practice rules, namely, Group I and Group II. Group I rules cover methods and practices which are illegal under laws administered by the Commission, and the Commission will, in the public interest, proceed against all parties employing such methods or practices in commerce. They are often referred to as "mandatory" rules, as distinguished from Group II rules which are voluntary expressions recommending against use of practices which the industry considers harmful or unethical, or recommending use of ethical practices which the industry considers beneficial to itself or the public.

In undertaking a discussion and formulation of rules, it is well that you keep in mind that the purpose of this proceeding is the promotion of law observance and that no rules will be approved by the Commission which do not meet the test of law; that is to say, Group I rules must be correctly interpretative of legal requirements, and Group II rules must neither sanction practices contrary to the law nor be opposed to the public interest.

The meeting, which was attended by representatives of toilet goods manufacturing firms, distributors, wholesalers and retailers, was presided over by Henry Miller, Director of the Trade Practice Conference Division of the Federal Trade Commission. The discussion centered largely about the use of demonstrators, cooperative advertising, and the payment of "push money," as was expected.

The meaning of "proportionally equal terms" as such phrase appears in subsections (d) and (e) of Section 2 of the Clayton Act as amended by the Robinson-Patman Act came in for a great deal of discussion at the conference.

The Federal Trade Commission officers were furnished with eleven alternate methods of paying for or furnishing "proportional" services to customers by members of the industry. Previous to the meeting, The Toilet Goods Association had sent out some 1900 copies of the suggested rules to members of the industry.

The conference was in agreement that there seemed to be no point in discussing: Commercial Bribery; Deception; Fictitious Prices; Defamation of Competitors or Disparagement of Their Products; Deception Marking or Branding of Products; Deceptive Imitation of Trade Marks, Trade Names, etc.; Deceptive Imitation of Competitors' Products; Misrepresentation as to Place of Manufacture; Procurement of Competitors' Confidential Information by Unfair Means and Wrongful Use Thereof and Inducing Breach of Contract.

At the close of the conference, it was announced that members of the cosmetic industry are invited to submit their views upon the proposed rules to the Federal Trade Commission either in person or in writing. Persons desiring to submit views or opinions should send them to Henry Miller, Director, Trade Practice Conference Division, Federal Trade Commission, Washington, D. C.

The Federal Trade Commission will now study the rules which were proposed at the meeting last month. Subsequently, another conference will be called for a second hearing. So far, no date or place for the second meeting has been announced, but it is expected that it will be held in Washington, D. C.

Many French Perfumers Discontinuing Operations

As the harvest continued at Grasse this week, the prospects of the French perfume trade were not as pretty as the blossoms. Of the many ingredients required to make men sniff with interest, the fields of Grasse produce only a few, and not enough of those. Citronella, civet, vetivert, santalol, ambergris, patchouli and a long list of other exotic products had to be imported from abroad, and they were still not arriving in France in anything like prewar quantities. Prices were staggering; a kilo (2.2 pounds) of musk is now 100,000 francs compared with 9000 prewar.

As a result, in the past few months 600 of the 2400 French perfume manufacturers have gone out of business. Another 600 are expected to close shop by the end of the year. Most were fly-by-nights who set up business during the war and filled fancy flacons with any sweet, synthetic smell—or colored water—that chemists could brew. . . . But not all perfumers made easy money by debasing their wares. . . . Such houses as Guerlain . . . fiercely resent a hint that they had adulterated their wares.

. . . If French perfume is to do the job, the French know they have their work cut out for them. The older houses are back on their feet, albeit a bit groggy. Last year the industry exported perfume worth $18,286,357, already almost half the pre-war figure. But the war gave the U. S. perfume industry a tremendous boost. It is now producing good scents at $8 to $10 a bottle. The French perfumers know that they are going to have trouble getting back all of their U. S. market. The famed houses are inclined . . . to concentrate on luxury products, selling for $15 a bottle and up.—*Courtesy of TIME, Copyright Time, Inc., 1947.*

Earl I. McClintock to Address DCAT June 25

Earl I. McClintock will return from Europe in time to address the Spring luncheon meeting of the Drug, Chemical & Allied Trades Section of the New York Board of Trade, June 25, at the Hotel Pennsylvania. He will give his audience the benefit of his latest observations on the future of export trade in chemical, drug and allied industries. Fred Stock, vice-chairman of the DCAT section, is in charge of arrangements.

Fritzsche Brothers Elects Officers and Directors

At the annual meeting of stockholders of Fritzsche Brothers, Inc., New York, N. Y., the following directors were re-elected: F. H. Leonhardt, John H. Montgomery, H. P. Wesemann, Dr. Ernest Guenther, Joseph A. Huisking, B. F. Zimmer, Jr., and F. H. Leonhardt, Jr.

At the annual meeting of the Board of Directors held on the same date, the following officers were elected for the current year: F. H. Leonhardt, president; John H. Montgomery, vice-president and treasurer; H. P. Wesemann, 2nd vice-president and secretary; Dr. Ernest Guenther, 3rd vice-president; Joseph A. Huisking, 4th vice-president; F. H. Leonhardt,

F. H. Leonhardt

J. H. Montgomery

H. P. Wesemann

E. Guenther

5th vice-president; John L. Cassullo, assistant treasurer; D. A. Nealy, assistant secretary and G. A. Wohlfort, comptroller.

J. George Fiedler Addresses Ohio Dermatology Society

J. George Fiedler, president of Kelton Cosmetic Co., New York, N. Y., read a scientific paper on the relationship of the dermatologist to the cosmetic industry on May 22. He was the guest speaker at a meeting of the Ohio Dermatological Society in Akron, Ohio.

Mr. Fiedler's paper traced recent developments in the discovery and accommodation to cosmetic sensitivity.

In addition, he described the manufacture, distribution and merchandising of basic items in the toilet goods industry.

Harold Janowsky Organizes Aroscent, Inc.

Harold L. Janowsky has organized Aroscent, Inc., with offices at 118 E. 20th St., New York, N. Y., to deal in essential oils. The company will also manufacture aromatic chemicals, flavors and perfume bases. Mr. Janowsky has been associated with the essential oil business as manager of the aromatics division of one of the leading essential oil houses for some years.

JEAN NIEL, INC.

established in 1824 in Grasse, France

importers of floral essences and essential oils

basic perfume and flavor materials

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we announce that

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Mr. RENÉ FORSTER, President

All well-known Allondon Specialties
Essential Oils and Aromatic Chemicals
Carried in Stock

Dr. Katz Exhibits Pictures of Vanilla Plantations at F.E.M.A. Meeting

Dr. Alexander Katz, of Dr. Alexander Katz & Co., Los Angeles, Calif., and the Essential Aromatics Corp., New York, N. Y., recently visited the Dallas and New Orleans branches of the company.

Dr. Alexander Katz

A. E. Illes, of the Dallas branch, Mr. and Mrs. Leonard Katz, of Los Angeles, A. D. Mizzy, of the New York office, and Paul Fourman, of the San Francisco office, joined Dr. Katz in Atlantic City to attend the Flavoring Extract Manufacturers' Association Convention. Dr. Katz exhibited motion pictures of vanilla plantations and care of vanilla in Mexico as part of the program of the convention.

Schofield-Donald Becomes Reheis Co.

Schofield-Donald Co., Inc., 88 Shipman St., Newark, N. J., will henceforth be known as Reheis Co., Inc. Under the direction of Daniel H. Reheis, president, the company has manufactured and distributed for many years fine chemicals for the food, drug and cosmetic industries.

Ph. Chaleyer Represents Laboratories Louis Bornand

Ph. Chaleyer, Inc., New York, N. Y., has acquired the right by mutual agreement with Laboratories Louis Bornand & Cie, Paris, France, to manufacture the products of that company and to act as its sole distributor in the United States. Philip Chaleyer, president of Ph. Chaleyer, Inc., contemplates sailing for France June 20 to obtain first hand information of the latest developments abroad and to re-establish former connections abroad as well as to make new ones.

BIMS Change Golf Date

The BIMS of New York have found it necessary to change the date of the June tournament at the Knoll Golf Club, Boonton Manor, N. J., from June 24 to June 19.

Firmenich Gives Reception

Informal and cordial hospitality marked the reception of Firmenich & Co., New York, N. Y., on the roof of the Gramercy Park Hotel, May 8, which was well attended by many notables in the allied industries. Robert Firmenich from Geneva, Switzerland, and Rupert Watson, who directs the affairs of the American company here, assisted by the staff of the company, greeted the guest.

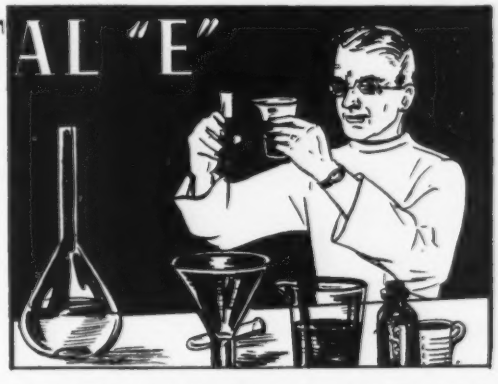
Charles Pisano Supervising Production in Dominican Republic

Charles Pisano, president of Citrus & Allied Essential Oils Co., Brooklyn, N. Y., has been supervising the production of new products in the Dominican Republic where plantations in which his company is interested are located.

Michel Pasquier On Trip Abroad

Michel Pasquier, perfumer of New York, N. Y., is on an extended trip abroad which will take him to the principal cities of Italy, France, Cyprus and Egypt before he returns September 3.

PLYMOUTH CRYSTAL "E" WHITE OIL



This oil has been the standard for many of America's very oldest cream manufacturers since their origin. It is water-white and crystal-pure . . . odorless and tasteless . . . of U. S. P. Acid Test and free of fluorescence . . . especially refined for the cosmetic industry and as pure as a mineral oil can be made. Because of its extra lightness you should specify it for the soft, light, fluffy creams demanded today.

Other mineral oils of heavier body if desired.

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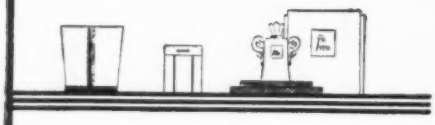
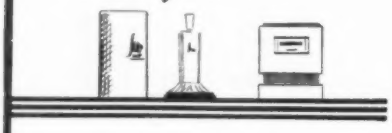
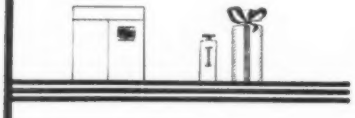


there is no finer



cosmetic container



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Minneapolis

Mrs. Comfort Covers Florasynth Territory After Husband's Death

Florasynth Laboratories, Inc., New York, N. Y., has announced its intention to maintain Mrs. Jack Comfort in the same territory which her husband had been in charge of for the past fifteen years, until his recent death.

Robert Senior

Robert Senior will assist Mrs. Comfort in direct visitation on customers so that full and complete service may be maintained, both in general and in technical character, as it has been in the past.

Fritzsche Quarter Century Club Still Growing

The Quarter Century Club of Fritzsche Brothers, Inc., New York, N. Y., has again received a new member. Miss Anne Cunningham became a member in March and Frederick F. Miller received his credentials of membership at a luncheon party held May 6.

A Treasury Bond and a gold wrist watch were the gifts of the directors and company employees, respectively, to Mr. Miller, whose induction brought the Club's roster up to 29 names. Sixteen of this number are still active.

Dr. S. J. Link Speaks on "The Economic Outlook"

Dr. S. J. Link, chairman of the Department of Economics of Rutgers University School of Business Administration was the principal speaker at the annual business meeting of the Chemical Market Research Association in the Hotel Biltmore, New York, N. Y., May 16. His subject was "The Economic Outlook: Fact and Fiction."

Albert Verley in New Quarters

Albert Verley & Co. has moved to new quarters, located at 440-450 West Superior St., Chicago 10, Ill. The telephone of the new office is Superior 7633.

Plans for increasing exports of ISCO chemicals, gums and waxes were formulated last month at a meeting of sales and export executives of Innis, Speiden & Co., New York, N. Y. Shown at the meeting in the company board room are Frank T. Shanahan, manager export division; P. L. Frost, manager of sales; and Herman Price, manager of the traffic department. Among the ISCO products available for export are talc, lanolin, absorption bases, gums, waxes, potassium chlorate and some heavy chemicals.

Wilfrid Beauchamp Becomes Officer in George Lueders & Co.

At a meeting of the Board of Directors of George Lueders & Co., Inc., New York, N. Y., Wilfrid F. Beauchamp was elected a vice-president. Mr. Beauchamp is in charge of the Montreal branch of the company, and has been in its employ 23 years.

Mr. Harold L. Janovsky

announces the formation of

AROSCENT, INC.

(Manufacturing Chemists)

Specializing in Products of Highest Purity, Quality, Uniformity

Perfumers' Basic Raw Materials

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KOMMON SCENTS!

We're fascinated by the repeated charges that Hollywood is "Red." Perhaps "regurgitated" is more apt than "repeated."

•

Somehow it gets a little tough to think of Louis B. Mayer as a gent who'd rather picket than pocket. It's hardly conclusive that a man who can afford caviar is a Russophile.

•

It may well be that there's propaganda in American pictures. But there would seem to be some confusion in cause and effect in blaming the Civil War on "Gone With The Wind."

•

Certainly the major portion of Hollywood's production fails to bear out a collectivist theme. We've somehow gotten the idea that the bouncy Misses Grable and Turner stimulate more thoughts of extremely private enterprise.

•

In recent years, only Mae West suggested "mass" appeal and her popularity was as exciting and short-lived as a politician's memory.

•

The clincher against moviedom's critics came when the Hollywood Bowl operators refused their premises for a Henry Wallace speech. You remember Henry? He recently played the American Government in Exile.

•

All charges, of course, should be carefully sifted. But we wouldn't nominate the Ku Klux Klan as an impartial body for the job. There's a difference in drawing the line between right and wrong and "right" and "left."

•

There undoubtedly are Reds in our country. But isn't it going far afield in ascribing it all to Technicolor?

•

Why all this? An anonymous column reader sent me a subscription to the Daily Worker. This is to inform him to cancel the subscription. My mother weaned me from comic pages at an early age.

•

Well, guess it's just a matter of time before a couple of Congressmen start investigating the Cosmetic Industry. What a job we'll have trying to convince them that only aesthetics is responsible for making most nail polish Red!

George Fiedler

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Owen Fogarty Visiting in U. S.

Owen Fogarty, proprietor of V. P. M. Products, Ltd., Dublin, Ireland, and London, England, producer of the Chatelet line of perfumes, is visiting in the United States.

Change of Address for Maryland Glass Corp.

The New York office of Maryland Glass Corp., formerly at 270 Broadway, has been moved to 50 Journal Square, Jersey City 6, N. J. The new telephone number is Journal Square 2-4657.

Mrs. Jeanne Maurin To Fly to Paris

Mrs. Jeanne Maurin, manager of Les Parfums Dana, will fly to Paris June 20 and will remain abroad until the middle of August. Prior to her departure Janvier Serra, president of the company, flew from Buenos Aires to Portugal to visit all of the company's branches in Spain, France, Switzerland, Belgium, England and Czecho-Slovakia. The steady progress of the company was marked June 5 when a reception was held in its new offices at 16-18 W. 60th St., New York, N. Y.

Fritzsche Brothers Open New Dallas Branch

A new branch office, located at 2208 Main St., Dallas, Texas, has been opened by Fritzsche Brothers, Inc., New York, N. Y.

Charles H. Milton, Jr., will be in charge of the new branch. He has, for some years past, been active in the firm's New England territory. Because of the size of the territory covered by Mr. Milton, Texas, Oklahoma, Arkansas, Louisiana and Mississippi, he will travel extensively by air.

National Starch Products Executives Hold Quarterly Meeting

Executives and department managers from the offices and plants of National Starch Products, Inc., New York, N. Y., and its Canadian affiliate Meredith, Simmons & Co., Ltd., gathered from all over the United States and Canada on April 12. The meeting was held in the Hotel Biltmore, New York, N. Y.

Norman F. Dahl, president of Prince Matchabelli, Inc., accepts the Charles S. Welch award for packaging during the T.G.A. 12th annual convention. With Mr. Dahl are Eileen Welch and Richard H. Grant of Houbigant, Inc., who made the presentation.

Francis Chilson Flies To Australia

Francis Chilson, industrial consultant, has been appointed International Consultant for Nicholas Proprietary, Ltd., Melbourne, Australia, one of the largest proprietary and chemical firms in the British Empire. On May 7, Mr. Chilson left by plane for the headquarters of the company to discuss a large expansion of the company's facilities and the probable entry of this company into the American market.

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NON-IONIC CHOLESTEROL in its most active and efficient form.

- Emollient, completely stable.
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Still using the same "old fashioned" methods proven successful for 95 years.

That's how long we've been bleaching beeswax since we first began operations in Holland in 1852.

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★

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Jeanne Noel Studies United States Market

Mrs. Jeanne Noel arrived in this country in March aboard the Queen Elizabeth for a study of the market in the United States. Mrs. Noel is associated with Dr. A. Rodestvensky in Laboratories Noel, Grasse, France. The firm produces natural floral oils, synthetics and compounded specialties, besides acting as a distiller of lavender oil. Dr. Rodestvensky came to Grasse twenty years ago, and after working with local essential oil houses established his own business. His firm has been in existence about sixteen years. Mrs. Noel reports that prices on some essential oils, including rose and jasmine, are declining. She plans returning to France in late September.

Frederic C. Barrett Pays Short Visit to U. S.

Frederic C. Barrett visited the United States briefly last month in the interest of his company, Parfums Renard. Mr. Barrett, who arrived on the America, was paying us his first visit since 1938. Parfums Renard was bombed out of London during the blitz and is now located in Newquay, Cornwall. During his stay, Mr. Barrett visited Chicago, Cleveland, Detroit, Washington and New York. He reported that Parfums Renard is greatly hampered by the shortage of containers and raw materials.

Florence Wall Returns to Consultation Work

Florence E. Wall has left Evans Research and Development Corp., New York, N. Y., to return to consulting work. She has also acted as technical editor with various companies during and since the war. Miss Wall expects to specialize in research, writing and educational work on cosmetics and cosmetology. Her new address is 155 East 29th St., New York, N. Y.

Obituary

Albert Albek

Albert Albek, president and founder of Albert Albek, Inc., Los Angeles, Calif., died April 27 at his home.

Mr. Albek was born into a family of Swiss perfumers and flavor manufacturers in Zurich, Switzerland, April 27, 1890. Deciding to carry on the family tradition himself he traveled and worked in France, Spain and England, never ceasing his quest for more knowledge of perfume and flavor manufacturing processes. Finally he brought his wide knowledge and experience to the United States and became associated with some of the leading perfume and flavor houses of New York City.

In 1935 he established his own business in Los Angeles where his tremendous energy and ability soon earned him an enviable place in the perfumery and flavor field. During the war years he broadened the scope of his business by undertaking to raise medicinal and condiment herbs of the type ordinarily imported from the Mediterranean countries. Today wide acres of these herbs in the San Fernando Valley of California attest his success in this field and have resulted in his being the recipient of much favorable publicity. His company thrived and he developed wide markets for his products throughout Latin America as well as in this country. He will be missed by a wide circle of friends throughout the industry.

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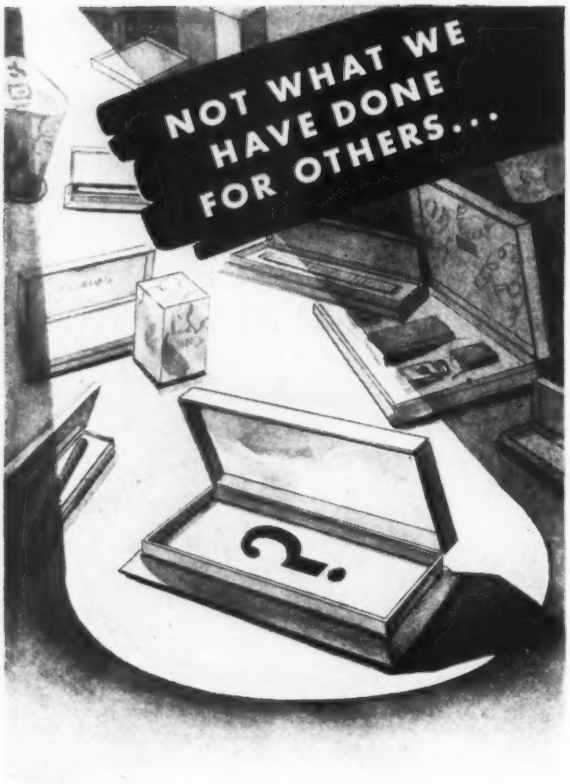

But WHAT WE CAN DO FOR *You*

Our customers are the blue chips of the jewelry and cosmetic world. A fancy paper box designed and produced by BARNETT, can go a long way toward taking *your* product off the shelf and into the home where it belongs.

Let's get together and talk it over.

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MARKET REPORT

Downward Trend in Essential Oil Prices

A SERIES of reductions in tallow were reflected in a similar trend in both red oil and stearic acid. Red oil prices dropped ten cents per pound from the quotations in force in April, and stearic acid prices declined about seven and a half cents. Other major price movements included reduction in crude and refined glycerin, sharply lower prices on all grades of gum rosin and an increase of one and a half cents in sodium citrate.

Following a brief period of stability in the early part of last month, the essential oil market developed an easier tone and in the latter half of the period prices on a number of articles lost considerable ground.

DOWNWARD TREND IN OILS

Many attributed the downward trend in oils to an absence of any real buying support, but in other directions dealers explained that it was possible to lower prices here in the light of more favorable replacement costs at primary markets where there was a keen desire to obtain United States dollars. The value of a great many articles, however, had been far out of line with normal levels, thus the downward movement was regarded by some as merely a general readjustment which had been long overdue.

Among the aromatic chemicals, various items derived from bois de rose and lemongrass appeared to be in a more comfortable supply position. Linalool, linalyl acetate and the ionones were offered more freely. Supply of phenylacetaldehyde was not too plentiful, and there continued several other firm spots in the market such as artificial musks, thymol, vanillin and coumarin.

Synthetic refined camphor prices were reduced two cents a pound on the powdered form, while ounce and half ounce tablets were cut a cent a pound.

After a complete shutdown for over six months, production of racemic menthol, U.S.P., was resumed last month because of an improved supply position in the raw materials from which it is made. While it will probably take several weeks or more before it will be possible to accumulate any stocks, the appearance of this material upon the market may serve to prevent a runaway market in the natural product where there has been talk of steadily rising prices in the months ahead. It was before the war when racemic menthol had been recognized by the United States Pharmacopoeia, thus the article may be used in all products where natural menthol is employed. By the latter part of June, there should be available fairly substantial quantities for domestic consumption.

In 1945 production of synthetic, technical and U.S.P., menthol reached approximately 85,000 pounds. Production of racemic menthol amounted to approximately 40,000 pounds in 1945, later declining to about 15,000 pounds in the first half of last year, just prior to the time when it became necessary to discontinue production. The prices quoted on racemic menthol average about $1 per pound below those prevailing on natural menthol from Brazil and China.

Crude glycerin production in the first half of this year is expected to be as large if not greater than the record year of 1944. Output of crude in March reached 19,015,000 pounds (absolute basis) or the highest level since March, 1944, at which time 18,459,000 pounds were produced. Production in the preceding month, February, 1947, was 16,703,000 pounds. Stocks at the close of March were 46,890,000 pounds, as compared with 43,132,000 pounds at the end of February. It is not yet clear whether the higher rate of production will continue over the last half of this year, since the rate of soap kettle operations will largely be dependent upon consumer demand for soaps.

The outlook regarding the demand for citric acid is highly favorable. More acid is likely to be available this year and more material is likely to be needed over the coming season as the result of an increase in sugar allocations to the beverage industry.

Selling schedules on cyclohexanone were reduced 4 cents a pound. Caustic soda, soda ash and other tonnage chemicals remained firm with major producers pointing to a continued heavy movement of supplies against contract orders.

A limited demand brought about an easier trend in gum tragacanth. Prices on all grades of the ribbon variety registered slight losses. The position in arabic gum seemed highly clouded at times in view of the downward trend in closely related items, and a narrow demand. Advices from the primary center continued firm with some reports indicating a good demand for the gum from other countries. Sumatra benzoin suffered a rather sharp decline. A rather tight supply situation developed in spermaceti wax toward the close of last month but in some quarters it was felt that such a situation would only prove temporary.

COCONUT OIL PRICES

Considerable weakness developed in coconut oil because of some sales of distressed lots at below generally quoted prices. Another depressing factor was the sharp break in copra, which declined $30 a ton within a week. Interest in crude cottonseed oil and peanut oil was dull. Domestic consumption of refined cottonseed oil amounted to 137,603 barrels of 400 pounds each in April in contrast to 188,177 barrels in March, and 202,857 barrels in April, 1946. Visible supply of oil at the end of April amounted to 820,800 barrels as against 930,500 barrels on March 31, and 1,300,000 barrels at the end of April, 1946.

The most discriminating manufacturers of cold wave solutions say that **STANTON'S AMMONIUM THIOGLYCOLATE** assures less odorous and faster action solutions than any other form of thioglycolate. Noteworthy, too, are their claims of less complications in compounding the finished solutions, and greater stability, as well as lovelier, tighter ringlets achieved in the final results.

STANTON'S AMMONIUM THIOGLYCOLATE is sufficiently moderate in price to permit you to afford this superior material for your cold wave solutions. Always delivered according to **STANTON'S** guaranteed specifications, or better, our highly purified **AMMONIUM THIOGLYCOLATE** will help solve your many problems connected with this important product for the beauty industry.

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Almond Bit, per lb.	4.75@	4.90
FPA	4.50@	5.25
Sweet True	.90@	1.10
Apricot Kernel	.80@	.85
Amber, rectified	2.25	Nom'l
Angelica Root	120.00@	185.00
Anise, U. S. P.	.80@	1.00
Aspic (spike) Span.	2.00@	2.50
Avocado	1.35@	1.40
Bay	1.35@	1.60
Bergamont	5.50@	5.85
Artificial	4.00@	4.60
Birch, sweet	2.50@	4.50
Birchtar, crude	5.50	Nom'l
Birchtar, rectified		Nominal
Bois de Rose	3.95@	4.15
Cade, U. S. P.	.80@	.85
Cajeput	2.90@	3.20
Calamus	20.00@	22.00
Camphor "white" dom.	.55@	1.25
Cananga, native	8.50@	12.00
Rectified	10.50@	15.00
Caraway	5.65@	6.10
Cardamon	25.50@	26.00
Cassia, rectified, U. S. P.	3.35@	3.75
Imitation	3.00@	3.15
Cedar leaf	1.10@	1.25
U. S. P.	2.50@	2.85
Cedar wood	1.00@	1.15
Celery	17.00@	18.25
Chamomile Roman	250.00@	
Cinnamon bark oil	35.00@	42.00
Citronella, Ceylon	1.75@	2.40
Java type	4.00@	4.75
Cloves, Zanzibar	1.55@	1.60
Coriander	18.00@	21.00
Imitation	12.00@	14.00
Croton	4.75@	5.00
Cumin	6.50@	8.25
Dillseed	6.65@	7.00
Erigeron	2.30	Nom'l
Eucalyptus	1.05@	1.45
Fennel, Sweet	3.75@	4.50
Geranium, Rose, Algerian	14.50@	20.00
Bourbon	13.50@	15.00
Turkish	8.00@	9.25
Ginger	10.00@	12.00
Guaiac (Wood)	2.80@	3.00
Hemlock	2.40@	3.00
Substitute	.55@	.60
Juniper Berry	6.10@	7.00
Juniper Wood, imitation	.65@	.70
Laurel leaf	20.00@	21.00
Lavendin	3.00@	3.75
Lavender, French	9.00@	13.00
Lemon, Calif.	3.35@	3.50
Italian	3.50@	5.75
Lemongrass	2.00@	2.90
Limes, distilled	5.75@	6.80
Expressed	12.25@	13.10
Linaloe	3.90@	4.50
Lovage	95.00	Nom'l
Marjoram	5.65@	6.20
Neroli, Bigarde P.	350.00@	390.00
Petale, extra	265.00@	300.00
Olibanum	6.25@	8.00
Opopanax	37.50@	39.00
Orange, bitter	3.35@	3.75
Brazilian	1.70@	2.00
Calif., exp.	1.80@	2.00
Orris Root, abs. (oz.)	135.00@	
Artificial	36.00	Nom'l
Pennyroyal, Amer	3.85@	3.95
European	4.25@	5.00
Peppermint, natural	8.15@	8.50
Redistilled	8.65@	9.00
Petitgrain	3.25@	3.75
Pimento Berry	5.75@	7.50
Pinus Sylvestris	4.25@	5.00
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(Continued on page 651)

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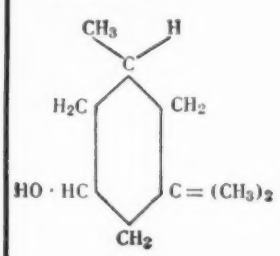

FIG. 1

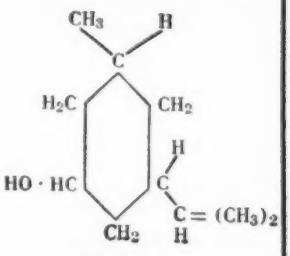

FIG. 2

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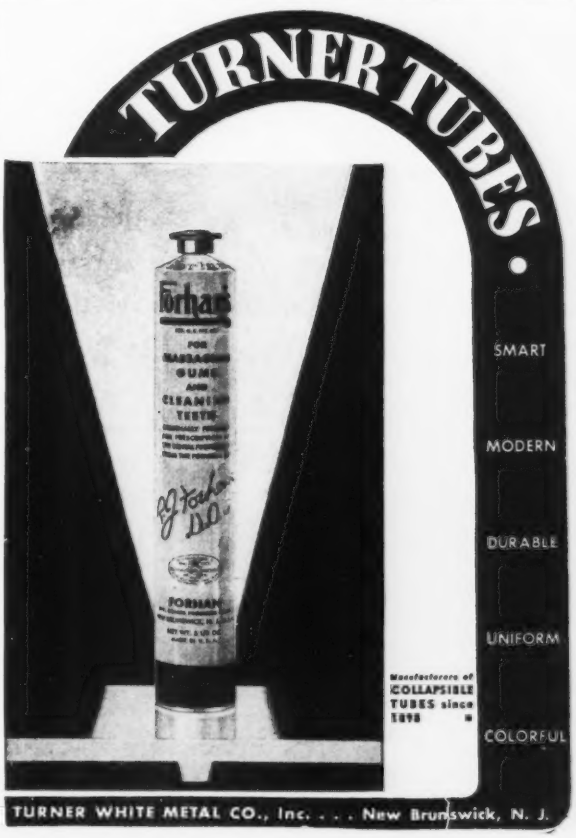

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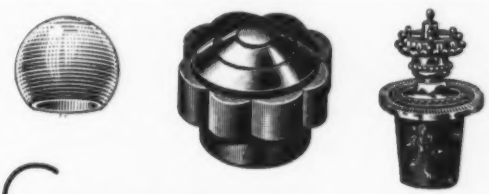

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HILARY SAYS:

MUCHISIMAS gracias, Señores y Señoras. Nunca pasé tal noche! Cualquier hombre es bueno para eso. — Estamos un poquillo cansaditos. — Ya lo creo!
(I only know a couple words but it sure puts my sombrero on one side to throw 'em around.)

WELL, anyway: I'm back from the Good Neighbors: Mexico and Cuba. As neighbors—we're lucky to have them! Good—they certainly are!

YOU swoop down from altitude (you think) but when you land, Mexico City is still altitude. The Reforma Hotel, the Posada del Sol, the Ritz—as well as the smaller Emporio, Maria Cristina and Montejo are all fine places to hang your hat. The longer you stay—the longer you'll want to stay. Mexicans make you feel that way. Dinner at Ciro's—super-de-duper!! (When I was a boy, the family called that meal "supper.") While you are eating—you get an additional appetite, because Diego Rivera did something to the walls: Not exactly a "Wall Flower";—topped by a hat and soulful with shoes, only,—his lovely-ladies creations are surrounded by flowers —and little else. Stuff caliente! Muy simpático!—Should you, however, prefer pancakes with sour cream, the Santa Anita is excellent for "enchiladas con crema." Before leaving Mexico City, be sure to pick up some silver gadgets: pins, trinkets, brooches, which are artistically designed and beautifully executed. Adios.

". . . and he floats through the air with the greatest of ease"—to Cuba.—Down below: the West Indies, sapphire sea, green hillsides, orange cliffs, booming surf—and even from up high, Cuba distinguishes itself by its thatched roofs and flat sugar plantations. La Habana: here hospitality and friendship were born! Saber vivir es la clave! And Cubans know how to live.—Business, luncheon, business, siesta, cocktails, fiesta,—many beautiful "orchidas de noche,"—and, by the way, if you want to go shopping, drop in at El Patio, S. Rafael 58, Habana for the very finest in alligator hand bags, wallets, purses, picture frames, etc. They are exquisitely made!

IT was nice, just the same, to get back to the old backyard and Good Manhattan Neighbors.
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I can talk about 'em,—and it "sounds" fine. Still, it's so much hogwash. If you had an actual sample, you might be able to do more with it than my best words and most beautiful dreams. (Sure,—I snore, too!)

THIRTY to forty years ago, Amber Colognes were very popular. I'll go out on a limb with a prediction: In the near future they'll be popular again. Time will tell. Daisies won't! Let me hear from you! You'll hear from me—with samples. Quiero que tú seas feliz!

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Wool Wax Alcohols in Cosmetics

EDGAR S. LOWER*

This article will be continued in the July issue of THE AMERICAN PERFUMER.

THE aim of this article has been to collect and correlate as much as possible of the published and unpublished literature and information on the subject of wool wax alcohols: both information of direct reference and also of any special nature which is likely to prove helpful as these products are developed in the cosmetic and related fields. These alcohols were only just becoming available in England, at least in any quantity, when war broke out, the first plant for their continuous production being laid down in this country eleven years back.

The basic material from which these alcohols are prepared is either raw wool grease (acid-cracked or otherwise) or refined wool grease (wool wax, lanolin).

Neutral wool grease, or lanolin, is now established as a true wax, not a fat, and Lewkowitsh actually proposed the term "wool wax" for this portion of wool grease many years ago, but the name did not seem to meet with a ready response in the trade at the time. It will be clear from this that the alcoholic constituents are, therefore, wax alcohols. Polyhydric alcohols are absent, although a dihydric alcohol, lanyl alcohol, has now been isolated and will be described later.

It is interesting to note that the fats of the actual sheep's skin grease, as against the sheep's wool grease, consist predominantly of glycerides, but also contain wax alcohol esters.

The actual and potential uses of this alcohol mixture seem to be enormous. It would appear to be a most promising material for the production of fine chemicals such as cholesterol, "steroidal" hormones, vitamin D_3 precursors, etc., and at the same time is being widely used as an anti-corrosive coating composition, textile dressing and in ointment bases. These alcohols are the subject of a monogram in the Sixth Addendum (1943) to the B.P. (1932) under the title of "Wool Alcohols" (Alcoholia Lanae):—

* Technical Director, Croda Limited, England

COMPONENT ALCOHOLS

A search through literature on the subject quickly shows the doubts and contradictory statements that exist on the question of what alcohols really do form part of this wool wax alcoholic complex. However, certain alcohols have definitely been isolated and identified, and these fall into three series—sterols, triterpene alcohols and aliphatic alcohols. These will be dealt with in this order, giving some general properties, tests, etc., and following this, where possible, some of the uses of these products. Reference to some closely related alcohols and derivatives will also be made as outlined earlier. Details are given of two cholesterol rich fractions which have now been isolated from wool wax alcohols, and which are now available and information available at present on the mixed wool wax alcohols themselves, discussed (Table 1).

STEROLS

Only two true sterols so far have been definitely isolated from the mixed wool wax alcohols—cholesterol and cholestanol. Although it is known often to accompany naturally occurring cholesterol, there is nothing to indicate yet the presence in wool wax alcohols of the chemical derivative of cholesterol, 7-dehydrocholesterol (precursor of vitamin D_3), although at least up to the year 1937, the presence of minute quantities of ergosterol were still regarded as not unlikely. The earlier belief that the so-called "meta-cholesterol" "oxy-cholesterol" and "isocholesterol" formed part of the complex does not find support in newer reports of work done on these products. Unsaturated steroidal ketones have now also been isolated. Cholesta- 3:5- dien-

7-one may also be found but this results from the action of heat on the esters of keto-cholesterol during the saponification of the wool wax.

The astonishingly diversified role of the sterols in the animal organism at once becomes apparent when it is remembered that certain of these chemicals may act as oestrus producing hormones, or as luteinizing or androgenic hormones, whilst others rule over the sodium potassium balance of the body, with others having the function of antirachitic agents. Still others are violent cardiac poisons.

CHOLESTEROL

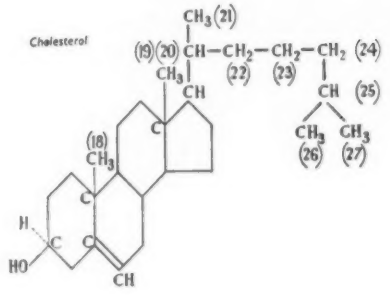
Cholesterol probably forms the greater part of the wool wax alcohols mixture and will, therefore, be dealt with first.

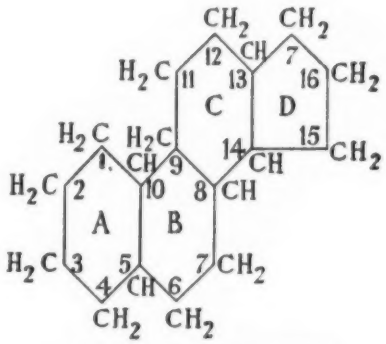
It is in recent years that the final formula of this product was established. Now it is recognized as the most widely distributed member of the class of chemicals known as sterols or steroids which are to be found in all cells of animal and plant origin. They are stable substances generally and of a neutral character, occurring in the free condition and also in combination with higher fatty acids as esters. They are all derivatives of cyclopentanoperhydrophenanthrene and have 27 to 30 carbon atoms. Most of these sterols have at least one unsaturated linkage in their molecular. The sterols differ from aliphatic alcohols in, for example, that they are not converted to fatty acids on heating with soda lime.

Cholesterol is present in the human body in a free and esterified condition and skin fats are very rich in esters of cholesterol, a reason often brought forward for its liberal use, usually in the form of wool wax, in cosmetics. Cholesterol crystallizes from chloroform in the form of anhydrous needles.

Some test results on pure cholesterol are:

Ash	0.1 per cent
Acetyl value	135.5
Bromine thermal test	7.38 deg.
Diolectric constant	5.4
Iodine value	66.3
Molecular weight (C27 H46 O)	386
Melting point	147/50 deg. C.
Specific gravity	1.052
Specific optical rotation in chloroform	(a) D^{20}—31.61 deg.
Volatile matter	0.3





Cyclopentanoperhydrophenanthrene

TABLE I

Group	Name	Formula	M.W.	M.P.°C.	B.P.	60 D4	Acetyl Value	t (a)y	IV	Per Cent*
Aliphatic Alcohols	"Ceryl"	$C_{26}H_{54}O$	382	79	...	...	...	...	...	12
	Cetyl	$C_{16}H_{34}O$	242	49	190°-15 mm.	0.810	197		47	
	"Carnaubyl"	$C_{24}H_{50}O$	354	68.5	...	...	...		...	1
	Lanolin	$C_{32}H_{64}O$	194	...	...	...	...	...	...	...
	Lano-octadecyl	$C_{18}H_{38}O$	270	42.5	...	...	...	...	...	12
	Lanyl	$C_{21}H_{42}O_2$	326	78.5	...	...	...	...	...	
	Long chain	C_{20-27}	...	...	...	...	...	...	...	...
	Unsaturated	C_{10-12}	...	...	...	...	...	...	...	...
Sterols	Cholestanol	$C_{27}H_{48}O$	388	141.5	...	...	...	(a) 22 D +27.4°	...	2.5-5.1
	Cholesterol	$C_{27}H_{46}O$	386	146	...	1.052	135.5	(a) 20 D −31.12°	68.3	25.5-33.1
	7-Dehydro-cholesterol	$C_{27}H_{44}O$	384	142.5	...	...	...	(a) 22 D −113.6°	...	...
	Ergosterol	$C_{28}H_{44}O$	396	160.5	...	...	...	(a) 20 D −132.3°	...	0.002-0.0035
	"Metacholesterol"	...	...	140.5	...	...	...	...	...	...
	"Oxycholesterol"	$C_{27}H_{46}O_2$	402	40	...	...	...	...	...	...
Triterpene Alcohols	Agnosterol	$C_{30}H_{48}O$	424	162	...	...	...	(a) 19 D +70.4°	...	0-5.3
	Lanosterol	$C_{30}H_{50}O$	426	140.5	...	...	...	(a) 15 D +57.9°	170.5	21.3-26.6

*Except for the percentage figures given for the first two sterols mentioned and the triterpene alcohols, much faith cannot be placed in these figures until further evidence appears. The colouring matter of wool wax alcohols is reported to consist mainly of a porphyrin, termed "Lanaurin," $C_{33}H_{38}O_{10}N_4$, probably related to bilirubin.

Cholesterol, upon sublimation, remains unchanged under ordinary pressure at two hundred degrees centigrade, but is decomposed at higher temperatures. For instance, from impure cholesterol, hydrogen is evolved at three hundred to three hundred and twenty degrees centigrade due to the presence of catalysts. Cholesterol contains one hydroxyl group and one double bond. It distils unchanged in vacuo. High vacuum, short path distillation is a method for obtaining sterols and vitamin D, and for their purification and concentration.

Unsaturated cholesterol derivatives are stated to act as catalysts in the decomposition of hydrogen peroxide. This is no doubt the cause of the excessive foaming produced when the latter is brought into contact with hot melted wool wax alcohols.

It has been found that when cholesterol is heated with "Floridin" (fuller's earth in carbon tetrachloride), it is first converted into an ether, then, on further heating is polymerized to a resinous product. Solutions of cholesterol, in for example, toluene, when refluxed with this activated earth are also said to become resinous and fluorescent.

Exposure of cholesterol to cadmium vapours from a quartz lamp also produces resinification, a process likened by the author to the catalytic action of driers in paint and varnish drying, but the suggestion is that here the oxide combinations produced by the irradiation of the sterol replace the driers of paints.

During irradiation, cholesterol loses its crystalline character and becomes granular and amorphous, with an increase of acidity and decrease in molecular weight from three hundred and eighty-six to two hundred and sixty-eight. Its solubility in alcohol increases from prolonged irradiation. If irradiated in the presence of oxygen it acquires photoactivation, the irradiated product emitting ultra-violet wave lengths and produces ionization of the surrounding air. It becomes strongly fluorescent and so do its alcoholic solutions. Pure cholesterol, with the possible exception of that obtained from the spinal cord, gives a mauve fluorescence in filtered ultra-violet light. A photo-electric effect has been detected in cholesterol both before (although only small) and after irradiation. Related no doubt to these observations may be the suggestion that cholesterol be stored in amber bottles at room temperature or in a cool place.

As is well known, cholesterol is an emulsifying agent of great importance, producing water-in-oil emulsions. This is probably the most important use for the product, apart from those based on its medicinal properties. It is especially useful for the former purpose in conjunction with its esters; a property which is carried through to its naturally occurring esters in e.g. wool wax; and the cholesterol in wool wax alcohols.

APPLICATION OF CHOLESTEROL

In treating some of the present uses of cholesterol in alphabetical order, mention must first be made to *alcoholates* which may be derived from it (especially in view of the fact that the mixed wool wax alcohols are cited as starting materials for an interesting group of these freely applicable derivatives).

The higher secondary alcohols react but slowly with, for example, sodium and as a result, do not yield alkoxides readily, but a potassium-in-benzene "emulsion" has been employed successfully to this end when using cholesterol as the alkyl radical.

Before considering the mixed wool wax alcohols in relation to cosmetics and similar products, attention is directed to the use and properties of some of the individual components in this respect, especially to two cholesterol-rich fractions which are now available under the trade names "KATHRO" and "DASTAR" wool wax cholesterol. Pure cholesterol from wool wax alcohols is also available, melting at 148 deg. C.

These wool wax alcohol fractions possess a high melting point, but this is not a definite figure as they usually begin to soften at 70 deg. C. but may not be completely melted at 130 deg. C.

Cosmetics containing other components are also discussed below, such as those containing oxidised cholesterol ("oxy-cholesterol" a form of hydroxycholesterol), lanosterol, the triterpene alcohol, and also the elusive "metacholesterol."

Table 2

SOLUBILITY AT 15/20 DEG. C.

CS Completely soluble
SD Very slight deposit
SS Substantially soluble
SI Substantially insoluble
CI Completely insoluble

	Wool wax (30% by W.)	Wool wax Alcohols (20% by W.)	Wool wax Acids (20% by W.)	Wool wax Cholesterol "Kathro" (5% by W.)
Amyl alcohol	SS	SD	SS	CS
Amyl acetate	SS	SI	SS	SD
Amyl formate	SS	SI	SS	CS
Acetal solvent	SS	SI	SS	SD
Absolute alcohol	SI	SS	SS	SI
Arachis oil	SS	SS	SS	SS
Butyl alcohol	SS	SI	SS	SD
Butyl acetate	SS	SI	SS	SD
Butyl lactate	SS	SI	SS	SI
Butyl oleate	..	SS	SS	SI
Butyl propionate	SS	..	SS	SD
Benzyl alcohol	SI	SS	SS	SD
Carbon tetrachloride	SD	CS	SD	SS
Castor oil	SS	SS	SS	SS
Cyclohexanol	SS	SD	SS	SI
Cyclohexanone	SS	SI	SS	..
Chloroform	..	CS	SD	CS
Cyclohexylamine	..	..	SS	SD
Dipentene	SD	SD	SS	SS
Dibutyl phthalate	SS	SI	SS	SD
Diamyl phthalate	SS	SI	SS	SD
Ethylene glycol mono-ethyl ether	SI	SS	SI	SI
Ethylene glycol mono-butyl ether	SS	SD	SI	SI
Ethylene glycol mono-methyl ether	SI	SI	SI	SI
Ethylene glycol mono-methyl ether acetate	SI	SI	SS	SI
Ethyl alcohol (Ind. Meth. Spirits)	SI	SI	SI	SI
Ethyl acetate	SS	SI	SS	SI
Ethyl lactate	SI	SI	SS	SI
Ethyl oleate	SS	SS	SS	SI
Ethyl ether	SD	SI	SD	SD
Ethyl palmitate	..	..	SS	SI
Ethylene dichloride	SD	SS	SS	SI
Hexyl alcohol	..	..	SS	SD
Isopropyl alcohol	SS	SI	SS	SD
Isobutyl alcohol	..	SI	SS	SD
Kerosene	SS	SS	SS	SS
Liquid paraffin	SS	SS	SS	SS
Methyl cyclohexanol stearate	SS	SS	SS	SI
Methyl cyclohexanol	SS	CS	SS	CS
Methyl cyclohexanol acetate	..	SI	SS	CS
Methyl alcohol	SI	SI	SI	SI
Methyl ethyl ketone	SS	SI	SS	SI
Mineral oil (light)	SS	SS	SS	SD
Morpholine	..	..	CS	CS
Petroleum ether	SD	SI	SS	SI
Toluol	SD	CS		
Trichlorethylene	CS	CS	SD	SD
White spirit	SS	SD	SS	SI
Xylol	SD	SD	SD	CS

The first of the two cholesterol fractions mentioned (KATHRO) is a white, amorphous, free-flowing powder containing cholesterol in a visible glistening crystalline form, and free from objectionable odour. The tests of an average sample of this fraction are as follows:

Melting point, capillary tube	110 deg. C.
Specific optical rotation in chloroform	(a) D^{20}—27.2 deg.
Iodine value (Wijs)	53.5

The product contains optically inactive alcohols, consisting of a mixture of long chain alcohols of 26 and 27 carbon atoms, in which "ceryl" and cetyl alcohols predominate. There is also a small quantity of cholesterol oxidation products and triterpene alcohols.

The solubility of this and the "DASTAR" fraction are given with that of the wool wax alcohol mixture (Table 2). Wool wax cholesterol fractions are slightly better emulsifiers than pure cholesterol, a factor which can only be attributed to the "influence of small quantities"—in so far that neither of these fractions are pure.

The second fraction mentioned, the "DASTAR" cholesterol, is an off-white to cream-colored granular powder.

Its average analysis has been found to be:

Iodine value (Wijs)	28.8
Specific optical rotation in chloroform	(a)D^{20}—18 deg.

It is often suggested that wool wax alcohols, comparatively free from aliphatic alcohols and other non-steroidal material, would be useful additions to the range of cosmetic raw materials. This has been partly achieved, at least in the "KATHRO" cholesterol.

It will be rather obvious that these two cholesterol-rich powders can be used in the production of most cholesterol-containing cosmetics with, if desired, slight adjustment of formula. The various formulae will illustrate this. In each case the wool wax cholesterol referred to is the more optically active one.

When cholesterol is exposed to bright sunlight for a time it will turn yellow, with a resultant considerable decrease in melting point, ceasing to give characteristic reactions with sulphuric acid/acetic anhydride. It is not thus effected if in sealed tubes in an atmosphere of carbon dioxide. Esters of the sterol are reported to act similarly. Cholesterol crystals containing water gradually lose this on exposure to air or on warming.

This sterol has been found to act as an antioxidant in certain oils e.g. apricot kernel and cod liver oil. In a classification of surface active substances it is described as a non-ionizing emulsifier having a neutral polar group, being a mono-hydroxyl alcohol; whose activity is only slightly influenced by changes of pH value.

CHOLESTEROL SOLUTIONS

Cholesterol is insoluble in water but, as is well known, blended with soft paraffin it will take up good quantities of this or aqueous solutions of medicaments to form water-in-oil emulsions. It is soluble in most oils and fats, fatty acids. Alkyl amine solutions, etc., are capable of being diluted with water to a considerable extent without precipitation of the sterol allowing, for example, its incorporation in ammonium thioglycolate solutions. Excess of some amines, triethylamine, for instance, results in some combination taking place.

The solubility of pure cholesterol in six solvents at various temperatures is given as follows, the range of solubilities going from 0 deg. C. to 50 deg. C. respectively:

PERCENTAGE OF SOLUBILITY OF PURE CHOLESTEROL

	0 deg.	10 deg.	20 deg.	30 deg.	40 deg.	50 deg.
Acetone	1.66	2.5	4	5	9	...
Benzene	...	3	5.5	7	13.5	18
Dioxan	...	6	9	17	23	...
Ethyl acetate	2	2.5	4.5	6	9.5	13.5
Methyl acetate	0.33	0.5	0.75	1	1.5	2.25
Petroleum benzene	1.125	1.5	2.33	3	6.5	10.5

Pyridine is a good solvent for cholesterol, but of course has a difficult odor.

In boiling absolute alcohol, cholesterol dissolves to the extent of 10 per cent: its solubility in ethyl alcohol of 95 per cent strength is 2.0 per cent; in ethyl alcohol 90 per cent, it is 0.5 per cent at 20 deg. C. Isopropyl alcohol (70 per cent) strength dissolves 1 per cent of the product and at 65 per cent strength it dissolves 0.5 per cent. Cold glacial acetic acid is a poor solvent and combines with the alcohol. The sterol dissolves slightly in the alkali metal salts of fatty acids (soaps); gall acids, and high molecular weight acids of cholesterol oxidation reactions. An aqueous solution containing together 6.94 per cent sodium glycolate and 2.35 per cent sodium taurocholate by weight will dissolve 0.185 per cent cholesterol. This figure can be increased to 0.325 per cent by addition to the solution of 1.2 per cent almond oil soap.

The solubility of cholesterol has been found not to be additive for a mixture of solvents. For example in (a) an alcohol-water, or (b) a dioxane-water mixture, solubility is greatly diminished but in the mixture (c) dioxane-benzene, (d) benzene-hexane, (e) benzene-alcohol (f) alcohol-hexane, or (g) hexane-dioxane, the solubility increases, reaching a maximum when the molar ratio is 3: 7; 3: 1; 7: 3; 2: 3; and 1: 1 respectively. Cholesterol is stated to form combinations with isopropyl alcohol, amyl alcohol and furfuraldehyde.

Various essential oils and aromatics dissolve large amounts of cholesterol but, here again, their utility is limited by the fact that irritation usually results from some and the accompanying strong odor must be taken into account.

Clear aqueous solutions of cholesterol may be obtained by treating this in the presence of water with a polyethylene glycol ether of a high fatty alcohol, such as oleyl, for instance, by heating together in water one per cent cholesterol, 2.5 per cent cholesteryl oleate and six per cent polyethylene glycol ether of oleyl ether. Polyoxyalkylene derivatives of the sterol and the wool wax acohols are being examined from this angle.

A further method employed for this purpose necessitates first dissolving the sterol and/or its esters in halogenated hydrocarbons, followed by dilution with one or more monovalent (e.g. propyl) alcohols, and finally, if required, glycols or glycerin.

Aqueous alcoholic solutions have also been obtained by the aid of soaps and soap-like substances (sulphonated oils or alcohols), and aliphatic or cyclic-aliphatic alcohols. Triethanolamine can also be employed.

CHOLESTEROL, HAIR TREATMENT

Cholesterol is a natural and normal constituent of hair cells, follicles, and sebaceous glands, and from this its use

in hair tonics has come to be regarded as important, being described as having growth-promoting and nourishing properties. Sulphur preparations have almost exclusively been employed in the treatment of falling hair (due to over-activity of the sebaceous glands) with more or less satisfactory results, but this newer method of treatment has been adopted since it was shown that there is a connection in the living organism between cholesterol metabolism and growth of the hair. Cholesterol, which has the action of exciting growth, shares with the phosphatides the work of building up the cells. If, on account of constitutional disturbance e.g. change in the organisms on account of illness, etc. there results a cholesterol deficiency of the sebaceous glands, growth of hair is affected, and loss of hair occurs.

Experiments show that the application of cholesterin in the abnormal horny processes seems to restore a normal condition, although in fact this method is opposed to the older treatment which attempted to remove the fat secreted. Here, fatty substances are added in the form of cholesterol, with the object of restraining the excessive secretion of the sebaceous glands. The use of this sterol in lotions for falling hair promises success in cases where such trouble is due to destroyed or abnormal functioning of these glands. Dandruff and scales are said to disappear in fourteen days, with chronic cases requiring a month or so. The recommendations are that the hair should not be washed too often while cholesterol treatment is being applied, in order to avoid irritation of the scalp. The sterol also helps in the reconstruction of degenerating hair and reactivating of the keratin-producing glands.

A recent preparation seems to be the result of an attempt to combine the older sulphur treatment with the cholesterol treatment. This preparation is Sulphur-Cholesterol, prepared by mixing an equal quantity of the sterol and sulphur together, with double the quantity of glycerin, and heating to two hundred degrees centigrade. The mass is then, with constant stirring, allowed to cool to room temperature. Uncombined sulphur is separated by extracting the reaction products with a suitable solvent.

This Sulphur-Cholesterol compound is covered by an American patent. It is reported to have powerful curative properties in seborrhoea and is used in proportions around one or two per cent. Cholesterol in alcoholic solution and containing glyceryl monostearate, has been prepared for use as a hair tonic. Cholesterol may also prove useful in allaying the irritating effects of certain other powerful stimulants often included in hair tonics, and may be employed to advantage in hair dyes.

The preparations below have recently been protected by patent in the U.S.A. as being suitable for the removal of hair dyes from human hair. (Formula "a" is intended for the removal of vegetable, organic and metal salt dyes, while "b" is intended especially for silver nitrate dyes. Parts are by weight.)

	(a)	(b)
Nitric acid 40 deg. Be	3	4.0
Hydrochloric acid	1	...
Oxalic acid	1	...
Ethyl acetate	1	...
Cholesterol	0.02	2.0
Diethylene Glycol	3	2.0
Sodium Formaldehyde sulphoxylate	10	...
Distilled water	39.96	52.0
Liquid paraffin	...	40.0

Cholesterol with other fatty alcohols has been specified as a material suitable for inclusion in compositions for bleaching hair, prepared by admixture with an oxygen-liberating substance such as hydrogen peroxide, the agents preferably being used in the presence of polysaccharides or albuminous materials. Methyl cellulose, gum arabic and dextrin are such materials. Cholesterol is especially suitable for treating porous hair.

HAIR CONDITIONERS

	(a)	(b)
Glyceryl monostearate	12	...
Wool wax cholesterol	1.5	0.4
Lanolin	0.5	...
Lecithin	1.0	4.0
Avocado Oil	...	90
Triethanolamine stearate	8	10
Castor oil	3	0.1
Water	73	4.0

CHOLESTEROL COLLOIDAL SOLUTIONS

So far, details in regard to the use of cholesterol in hair preparations have been confined more or less to true solutions of the material. There is, of course, a further form which would appear to be suitable for this and similar purposes, e.g. hair rinses, skin lotions etc. and this is the colloidal solution of cholesterol. The preparation of these solutions is typified by the following example: One gram of the sterol is dissolved in 100 ml. of ethyl alcohol with gentle heating, five ml. of this solution is discharged in a thin stream into 80 ml. of distilled water which is previously warmed to 65 deg. C. The water becomes slightly cloudy. Acetone and many similar chemicals may be used as the solvent and wool wax cholesterol may be used as the sterol donor. In practice it has been found that pure re-crystallized cholesterol melting between 145-148 does not always give the desired result. If necessary the solvent may be eliminated by boiling for a short time. If sodium soap solutions are substituted for water in the preparation of these cholesterol solutions with acetone, the dispersion is much more rapid and "molecular" dispersion can be obtained. Similar results may be obtained by using the mixed wool wax alcohols.

Solutions of highly purified cholesterol coagulate at the moment of formation even in concentration of less than two per cent, impurities difficult to remove from cholesterol apparently aid solution formation. This solution formation characteristic has been suggested as a delicate physio-chemical reaction for cholesterol purity. The nature of the solvents used, stirring speeds, temperatures, etc. are all of great importance in producing stable finished products and so far as concentration is concerned, the figure of eighteen per cent cholesterol has been put forward as a safe maximum. The stability of these colloidal solutions determined in the presence of various inorganic salts, bile acids and proteins, etc., have shown that the nature of the medium is of little importance, the pH value being the main factor. The more acid the medium, the more effective are inorganic salts in precipitating the sterol. Proteins are found to lower the stability, and bile acids protected the colloid. Cholesterol solutions have strong reducing properties. These solutions quickly reduce ferricyanides in the presence of air, but on the other hand, they possess oxidizing powers towards diamines and naphthol. One stabilizing agent for these colloidal solutions is sodium iodoxiquinoline sulphonate, which does not alter the state of the solution. In concentrations of

one half to five per cent it is reported capable of stabilizing concentrations up to 12 per cent cholesterol.

Cholesterol esters, which it is suggested must be regarded as hydrophobe in nature, can act as protective colloids for cholesterol solutions.

Lecithin and albumen also help to stabilize them.

Short electric waves of the order of five metres have a coarsening effect on aging cholesterol colloids.

Cholesterol gels have been prepared.

CHOLESTEROL EMULSIONS

Apart from the cosmetic application of cholesterol in solutions and colloidal solutions, there is also to be considered its use in true emulsion form i.e. in both water-in-oil and oil-in-water type emulsions.

As mentioned earlier, this alcohol is an emulsifying agent of the first rank for the production of water-in-oil emulsions, especially in conjunction with its esters, which on their own are not of great significance in this respect. Many formulae, such as those given below, illustrate the employment of the product for this purpose.

HAIR CREAM

	(a)	(b)
Wool wax cholesterol	1.5	3
Soft paraffin	7.0	...
Lanolin	6.0	2
Liquid paraffin	27.0	63
Water	59.5	23
Hard paraffin	...	15

All the fatty materials are melted at the lowest temperatures and allowed to cool to 40 deg. C. when the water, at the same temperature is stirred in intermittently i.e. a little at a time (ten per cent) until all is added, when stirring is continued down to 20 deg. C. and the product homogenized.

Unsaturated sterols, of which cholesterol is an example, seem to possess better emulsifying properties than saturated ones and they also emulsify better if in conjunction with other high molecular weight alcohols, fats and waxes—conditions which usually exist in most cosmetics.

Observations connected with cell permeability have indicated that fat acids readily penetrate films of cholesterol and form mixed films which are more stable than films of either component.

In connection with the evaporation of water through unimolecular films, it has been found that cholesterol offers little resistance to its transmission.

The esters alone, many of which, incidentally, form anisotropic fluids on warming, are not so powerful as the parent alcohol as emulsifying agents, and it has been shown that esterification of the alcohol group in cholesterol depresses to a very great extent the emulsifying properties of the product. Wool wax is a much better emulsifying agent then, for example, cholesteryl stearate although, of course, three to seven per cent of free alcohols are present in the former.

Sterols	Water (ml) per 100 mls base
(a) Cholesterol (pure)	140
(b) Cholesterol from wool wax alcohol	140
(c) Cholesterol oleate (pure)	110
(d) Cholesterol stearate (pure)	90
(e) Ergosterol (pure not irradiated)	80
Ergosterol (crude, from yeast)	85
(f) Phytosterol (pure)	120
Phytosterol (crude)	120
(g) Wool wax alcohols (mixed)	160
(h) Wool wax (largely crude cholesterol lanosterol esters)	125

The active emulsifiers of wool wax have long been referred to as "Oxycholesterol" and "Metacholesterol" but these are now known to be mixtures of sterols and other compounds, the active principle of the mixtures being cholesterol. Cholesterol blown with oxygen shows increased emulsifying powers, but when oxidized with perbenzoic acid in chloroform at room temperature it gives results no better than when not so treated.

The selective asmotic properties of wool wax, effective when used as a dialysing membrane, were found to be due to its cholesterol content.

The following formula for a face lotion is a typical example of cholesterol in a cosmetic oil-in-water emulsion:

FACE LOTION

Wool wax cholesterol	1.3
Stearyl alcohol	2.0
Potassium stearate	3.0
Water	193.7

The wool wax cholesterol and the stearyl alcohol are melted together at 70 deg. C. A solution of the stearate is prepared at a temperature slightly higher, and the alcohols poured into this with brisk agitation.

BEAUTY CREAM

Wool wax cholesterol	1.3
Cetyl alcohol	0.5
Liquid paraffin	10.0
Stearic acid	5.0
Triethanolamine	2.5
Water	100.0

Although mention has already been made of the use of cholesterol as an emulsifying agent of the water-in-oil type, more recent attention has been directed to the utilization of cholesterol for stabilizing oil-in-water emulsions under certain conditions. Sterols, e.g. cholesterol, have been mentioned as suitable emulsifying agents for emulsion polymerization of unsaturated organic compounds.

Edible emulsions described as bread spreads and consisting of emulsified edible mineral oil, ceresin and water, using cholesterol as the emulsifying agent, are a recent innovation. Such emulsions may be "fortified" with vitamins or other diet factors and may contain added accessory agents such as dye colors, flavoring agents and perfumes.

Cholesterol is used as an emulsifying agent in the preparation of suppositories or other shaped medicaments, prepared with a plastic base consisting of an emulsion of a fat melting at body temperature with a glycerin-containing aqueous solution of gelatin, or a vegetable mucilage capable of setting to a jelly on cooling.

The function of cholesterol in the organism and the proper use of the material in cosmetics, have often been discussed. Lewinson wrote that the transportation of water-insoluble material such as the fats, proteins, etc., within the body is achieved by recourse to emulsions in which cholesterol and related compounds act as the emulsifying agent. The majority of true fats contain only minute traces of cholesterol, but the fatty layer on the surface of the skin is composed to a large extent (14-25 per cent) of esters of fatty acids and alcohols of high molecular weight, including cholesterol and related lipoids. It is divided into three main components in the ratio, 1 : 1 : 3: —(sterol, lecithin and unsaturated fatty acids)—and this naturally led to the suggestion that cosmetic creams should contain these ingredients in this ratio.

This evidence is put forward as the reason why such skin

cosmetics as those designated "Nourishing Creams," "Skin Foods," "Regenerative Creams" and "Tissue Creams," which usually contain cholesterol and cholesterol esters, are just the products to apply to the skin, following conditions capable of removing the true fats from the skin. Cholesterol and lecithin are stated to produce a beneficial effect by regenerating the skin cells. Cholesterol can be easily diluted in a fatty medium for this purpose, allowing greater amounts to be used than would be possible with alcoholic solutions; for example, skin "tonics" may contain up to 1.5 per cent of this sterol. Greater proportions can be used, however, and even concentrated suspensions of cholesterol in a fatty base are claimed to be effective.

HAND CREAMS

	(a)	(b)
Wool wax cholesterol	1.3	5.0
Soft paraffin	...	10.0
Stearic acid	15.0	...
Liquid paraffin	...	60
Cetyl alcohol	1.7	...
Arachis Oil	5.0	...
Caustic Potash	0.8	...
Glycerin	16.0	4.0
Water	60.2	80.0
Hard paraffin	...	24.0

Discussing the relation of cholesterol to the cellular surface of the skin, another writer reports that the alcohol forms a protective coating for each cell. The enrichment of the horny layer of the skin with cholesterol prevents drying of the elastic cells and promotes their flexibility.

There is reported to be a daily excretion of cholesterol through and on to the skin of humans, amounting to 0.1-0.2 gm.

COLD CREAMS

	(a)	(b)
Sweet almond oil	...	50
Glycerin	4	...
Lanolin	...	4.7
Beeswax	...	13
Wool wax cholesterol	5.0	1.3
Lecithin	...	1.5
Borax	...	0.9
Water	80.0	28.6
Hard paraffin	20.0	...
Soft paraffin	15.0	...
Liquid paraffin	60.0	...

It has been shown that strong sunlight causes a rise in the cholesterol and cholesterol ester content of the skin of rabbits, with the water content usually also increasing in this local area. White rats kept in the dark showed a lessening of the cholesterol content of their skin.

The proportion of cholesterol in the human skin also increases on exposure to the sunlight from seven to 150 per cent and it is recorded that various parts of the face contain two to seven times as much cholesterol as skin from the abdomen of the same person, and also that the distribution in the facial skin is roughly proportional to the relative degree of exposure to the sun.

ANTI-SUNBURN OILS

	(a)	(b)
Arachis Oil	20	50
Raisin Seed Oil	20	...
Liquid paraffin	48.5	46.1
Anti-solaire screen	7.5	3.0
Wool wax alcohols	5.0	1.0

CHOLESTEROL ALKYL SULPHATE EMULSIONS

A great deal of attention has recently been directed to the manufacture of emulsions of practical value which are stabilized with combinations of two emulsifying agents, one oil-soluble and the other water-soluble or substantially so—e.g. cholesterol and cetyl sulphate, described earlier as oil-in-water emulsion bases. An important feature of the alkyl sulphate is the property which they have of combining with high molecular weight alcohols, such as the cholesterol occurring in wool wax, to give a complex body having excellent emulsifying properties (the oil-soluble properties of the higher alcohols, together with the excellent hydrophilic properties of the alkyl sulphates). For example, from two to five per cent of the higher alcohol is added to the oil phase of an intended emulsion formula and sufficient alkyl sulphate, calculated to give one tenth per cent on the finally diluted emulsion added to the aqueous phase. Both groups of components are warmed somewhat and the oil phase run into water, being added gradually, keeping the oil/water ratio high at all times to give maximum dispersion. The stabilizing mechanism involves penetration of the cholesterol film by the sulphate.

Examples for formulation are as follows:

	(a)	(b)	(c)
Wall wax alcohols	5.0	5.0	...
Wool wax cholesterol	...	...	5.0
Ceresin wax	2.5	...	2.5
Paraffin wax	5.0	5.0	5.0
Liquid paraffin	25.0	25.0	25.0
Sodium alkyl sulphate paste	0.75	0.75	0.75
Water	60.0	60.0	60.0

—and these are prepared by melting all the ingredients together except the water and sodium alkyl sulphate—to 70 deg. C. and stirring into the solution of the sulphate in water at 72 deg. C. with brisk stirring. Vast improvements in color of emulsion can be obtained by the use of homogenizers. Such emulsions have been found to possess very good properties as ointment bases. None of the above formulae have been tested with medicaments incorporated.

The degree of interaction between the polar groups of the film substances and penetrating compound e.g. cholesterol, and cetyl sulphate respectively, is of importance. When cholesterol acetate or stearate is used instead of the sterol, stable emulsions are not produced. The reactivity of polar groups is as follows:

$$\overset{+}{N}H_3 > SO_3^- > SO_3^- > COO^- > \text{(bile acid anions)}$$

VANISHING CREAM

Stearic acid	20.0 g.
Caustic Potash	0.75
Water	60.75
Wool wax cholesterol	1.30
Lecithin	0.5
Cetyl alcohol	5
Arachis oil	1.7
Glycerin	10.0

ESTERS

Cholesteryl esters have not yet found a place in cosmetic formulation except, of course, in a very crude form as wool wax. They have been suggested as superfatting agents in conjunction with cholesterol especially the laurate and stearate.

A general method of preparing cholesterol esters has recently been reported. A mixture composed of:

0.02 mole the fatty acid
0.02 mole the sterol.
0.0015 mole the p-toluene-sulphonic acid
150 ml anhydrous benzene

is placed in the apparatus described by Bell and Taub and

refluxed for three hours in an oil bath, the temperature of which is maintained between 130-140 deg. C.; the reaction mixture is allowed to cool, filtered and the solvent then removed by heating under reduced pressure on the steam bath. The residue is washed with two or three 20 ml. portions of acetone, the latter removed by suction, and the crude ester recrystallized from a suitable solvent until the melting point is constant. Two crystallizations are usually sufficient.

Apart from the acetate, the esters of cholesterol are only very slightly soluble in alcohol. Cholesterol forms loose compounds with fatty acids, apart from the true stable esters. Similar compounds are formed with lecithin, cetyl alcohol, glyceryl mono- and dipalmitates (but not with triglycerides).

The commercial production of the various cholesterol esters and derivatives include iodo-compounds intended for use in pharmacy and therapeutic agents and also as intermediates. These are produced in one process, by heating the hydroxy-compounds in the form of organic sulphuric acid esters, with sodium iodide. Methane sulphonyl cholesterol can be so employed. Esters of good bactericidal action (for use particularly in the treatment of lepra) have been prepared by reacting cholesterol and chauloumgric acid or similar acids. Such esters are readily soluble in acetic acid esters and ethyl ether. They are insoluble in water, but moderately soluble in alcohol and fatty oils. Esters of a similar nature have been prepared from the employment of phenyl propylic acid chloride; crotonic acid chloride and a benzylidene propionic acid. Betaine chloride esters, dicholesterol phosphates, cholesterol sodium sulphoacetates and cholesterol digitonides, have all been used as anti-spattering agents in margarine.

FERMENTATION

There is reference to the action of cholesterol in yeast fermentation. Cholesterol solutions inhibit the formation of yeast living cells, but increase that of yeast autolyzates. Again, in regard to alcoholic fermentation it has been found that in concentration of 0.004 to 0.04 per cent, cholesterol accelerated fermentation. Irradiation of the sterol for 15 to 45 minutes increased this activity, but inhibitive activity is induced after irradiation for 60 minutes.

HORMONES

As mentioned earlier, cholesterol is the starting point for one or two of the more important sex hormones. The male sex hormones, androsterone, testosterone and dehydroandrosterone have all been synthesized from cholesterol. The female sex hormone, progesterone has also been obtained via dibromo-cholesterol.

In the process for the production of progesterone, cholestenone (which can be prepared from cholesterol by, for example, refluxing in acetone and benzene with aluminum butoxide) is oxidized by means of oxygen at 120/160 deg. C. 40 hours in the presence of vanadium pentoxide followed by purification. Starting materials for preparing progesterone in the form of pregnenolone and 5: 6-cholic acid, are obtained by oxidation of cholesterol with chromium compounds in the presence of sulphuric acid. Another process consists essentially of the oxidation of cholesterol in sulphuric acid of 50 to not greater than 83 per cent strength, with chromic acid. Androsterone has been obtained by first hydrogenating cholesterol to epidihydrocholesterol, using nickel, followed by oxidation of the acetate of the latter sterol with chromic acid.

MEDICINE

Employment of cholesterol in medicine includes its internal application to treatment for pernicious anaemia, haemolytic jaundice, blackwater fever and enteritis, owing to internal putrefaction. It is also employed in treatment of pulmonary tuberculosis. Its action is both antiseptic and antitoxic. Free cholesterol is known to act, at least in vivo, as a neutralizing substance to a number of different poisons, such as saponin and tentanolysin, and as a haemolytic agent of the pneumococous. It has a strong inhibitory action on the lipolytic enzymes, and may thus help to regulate the lipoid digestion within the cells. Cholesterol enters into the preparation of pharmaceutical compounds, ("Durant" preparations), for injection into muscular systems or subcutaneously, consisting of incorporating active substances with aqueous emulsions of lipoids, antiseptics, regulators and stabilizers, when a system results capable of holding any desired doses of medicaments and of releasing them over any desired space of time, but gradually, so that doses of medicament may be administered without detriment to the organisms. In such a system, cholesterol acts as a regulator, retarding the release of the medicaments.

PIGMENT DISPERSION

The employment of cholesterol in aiding pigment dispersion has been protected and suggests its use in manufactures of pigmented cosmetics. It is used in the production of suspensions of titanium pigments, for instance, in thermoplastic materials, e.g. waxes, resins. The function of the cholesterol in such a process is to aid wetting of the pigment by the waxes, etc.

SOAP

On the subject of soaps reference may first be made to a protected process for incorporating irradiated cholesterol in an attempt either to impart anti-rachitic properties to the soap, or the beneficial dermatological properties that are possessed by or accompany the anti-rachitic principle. The larger outlet, however, is the use of the sterol as a superfatting agent. Various mixtures also have been suggested consisting, for instance, of cholesterol and cholesteryl laurate and stearate, or the sterol and cetyl alcohol, or white wax. The opinion is expressed that cholesteryl esters may be particularly useful in producing germicidal soaps, tending to increase the absorption of curative agents. Even small traces of cholesterol, it is maintained, enhance the cosmetic effect of toilet soaps. Cholesterol in an emulsified form, as present for instance in soap lather, easily penetrates the epidermis and imparts suppleness to the dermis.

A specific example of a superfatting mixture consists of approximately five parts cholesterol, eight parts lanolin, fourteen parts cetyl alcohol. An excess of cholesterol, incidentally, reduces the lathering power of soap to a greater extent than does lanolin.

Cholesterol-polyoxyalkylene ethers obtained by reaction of cholesterol with alkylene oxide in an autoclave at about 130 deg. C. have been patented and products of this nature are described as having special properties of importance, particularly as dispersing, solubilizing, wetting and emulsifying agents etc.

Substances for addition to wetting out, foaming, dispersing, etc., have been found in the form of sulphonated ethers or esters of e.g. cholesterol and a polyhydric alcohol containing one or more monoesterified acid radicals of boron or phosphorus.

VITAMIN PRODUCTION

The last reference to the uses of cholesterol deals with the manufacture of the precursors of vitamin D_3—the anti-rachitic vitamin. Ordinary cholesterol, purified simply by recrystallization, may be anti-rachitically activated by exposure to the action of a high voltage cathode ray tube. Cholesterol or a substance containing it is rendered pro-vitamin active by oxidation with non-gaseous agents of the type hydrogen peroxide, benzoyl peroxide, eosin and chromic anhydride. In another example, cholesterol is enriched in pro-vitamin D_3 content by heating the sterol with solid benzoyl peroxide at temperatures between 100 and 200 deg. C.

It has been observed that irradiated crude cholesterol is more effective in preventing rickets in chicks than an equivalent number of units of irradiated ergosterol and that irradiated heat treated cholesterol contains a vitamin resembling that of liver oils more nearly than irradiated ergosterol.

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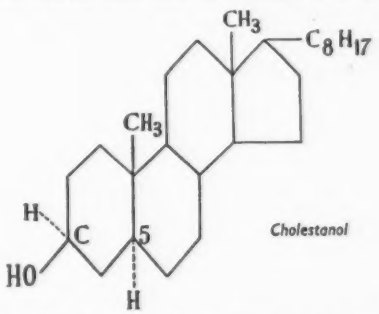

at 104-106 deg. C., and showing a specific rotary power (a) D : —54 deg. The compounds are dissolved in a solvent, of the acetone type, and the double compound precipitated by addition of water. Ketonic bodies having the properties of male sex hormones having been prepared by oxidizing cholesterol phthalic, succinic or sulphuric acid esters followed by saponification. Hydrogen peroxide or potassium permanganate are cited as examples of the oxidizing agents which may be used. The process is also applicable to an alcohol (C.19 H.39.0) prepared from cholesterol by heating this latter sterol with cuporous chloride and fractionally distilling the reaction products.

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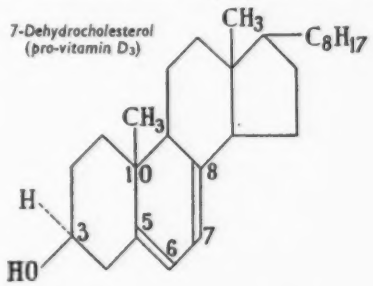

The resulting irradiation product is the form of Vitamin D, produced when the skin is exposed to the sunlight, and is termed Vitamin D_3. In an extensive study of the reaction of 7: dehydrocholesterol, it has been found that the behaviour of the substance is practically identical with that of ergosterol. 7-dehydrocholesterol is a colorless substance

refluxed for three hours in an oil bath, the temperature of which is maintained between 130-140 deg. C.; the reaction mixture is allowed to cool, filtered and the solvent then removed by heating under reduced pressure on the steam bath. The residue is washed with two or three 20 ml. portions of acetone, the latter removed by suction, and the crude ester recrystallized from a suitable solvent until the melting point is constant. Two crystallizations are usually sufficient.

Apart from the acetate, the esters of cholesterol are only very slightly soluble in alcohol. Cholesterol forms loose compounds with fatty acids, apart from the true stable esters. Similar compounds are formed with lecithin, cetyl alcohol, glyceryl mono- and dipalmitates (but not with triglycerides).

The commercial production of the various cholesterol esters and derivatives include iodo-compounds intended for use in pharmacy and therapeutic agents and also as intermediates. These are produced in one process, by heating the hydroxy-compounds in the form of organic sulphuric acid esters, with sodium iodide. Methane sulphonyl cholesterol can be so employed. Esters of good bactericidal action (for use particularly in the treatment of lepra) have been prepared by reacting cholesterol and chauloumgric acid or similar acids. Such esters are readily soluble in acetic acid esters and ethyl ether. They are insoluble in water, but moderately soluble in alcohol and fatty oils. Esters of a similar nature have been prepared from the employment of phenyl propylic acid chloride; crotonic acid chloride and a benzylidene propionic acid. Betaine chloride esters, dicholesterol phosphates, cholesterol sodium sulphoacetates and cholesterol digitonides, have all been used as anti-spattering agents in margarine.

FERMENTATION

There is reference to the action of cholesterol in yeast fermentation. Cholesterol solutions inhibit the formation of yeast living cells, but increase that of yeast autolyzates. Again, in regard to alcoholic fermentation it has been found that in concentration of 0.004 to 0.04 per cent, cholesterol accelerated fermentation. Irradiation of the sterol for 15 to 45 minutes increased this activity, but inhibitive activity is induced after irradiation for 60 minutes.

HORMONES

As mentioned earlier, cholesterol is the starting point for one or two of the more important sex hormones. The male sex hormones, androsterone, testosterone and dehydroandrosterone have all been synthesized from cholesterol. The female sex hormone, progesterone has also been obtained via dibromo-cholesterol.

In the process for the production of progesterone, cholestenone (which can be prepared from cholesterol by, for example, refluxing in acetone and benzene with aluminum butoxide) is oxidized by means of oxygen at 120/160 deg. C. 40 hours in the presence of vanadium pentoxide followed by purification. Starting materials for preparing progesterone in the form of pregnenolone and 5: 6-cholic acid, are obtained by oxidation of cholesterol with chromium compounds in the presence of sulphuric acid. Another process consists essentially of the oxidation of cholesterol in sulphuric acid of 50 to not greater than 83 per cent strength, with chromic acid. Androsterone has been obtained by first hydrogenating cholesterol to epidihydrocholesterol, using nickel, followed by oxidation of the acetate of the latter sterol with chromic acid.

MEDICINE

Employment of cholesterol in medicine includes its internal application to treatment for pernicious anaemia, haemolytic jaundice, blackwater fever and enteritis, owing to internal putrefaction. It is also employed in treatment of pulmonary tuberculosis. Its action is both antiseptic and antitoxic. Free cholesterol is known to act, at least in vivo, as a neutralizing substance to a number of different poisons, such as saponin and tentanolysin, and as a haemyolytic agent of the pneumococous. It has a strong inhibitory action on the lipolytic enzymes, and may thus help to regulate the lipoid digestion within the cells. Cholesterol enters into the preparation of pharmaceutical compounds, ("Durant" preparations), for injection into muscular systems or subcutaneously, consisting of incorporating active substances with aqueous emulsions of lipoids, antiseptics, regulators and stabilizers, when a system results capable of holding any desired doses of medicaments and of releasing them over any desired space of time, but gradually, so that doses of medicament may be administered without detriment to the organisms. In such a system, cholesterol acts as a regulator, retarding the release of the medicaments.

PIGMENT DISPERSION

The employment of cholesterol in aiding pigment dispersion has been protected and suggests its use in manufactures of pigmented cosmetics. It is used in the production of suspensions of titanium pigments, for instance, in thermoplastic materials, e.g. waxes, resins. The function of the cholesterol in such a process is to aid wetting of the pigment by the waxes, etc.

SOAP

On the subject of soaps reference may first be made to a protected process for incorporating irradiated cholesterol in an attempt either to impart anti-rachitic properties to the soap, or the beneficial dermatological properties that are possessed by or accompany the anti-rachitic principle. The larger outlet, however, is the use of the sterol as a superfatting agent. Various mixtures also have been suggested consisting, for instance, of cholesterol and cholesteryl laurate and stearate, or the sterol and cetyl alcohol, or white wax. The opinion is expressed that cholesteryl esters may be particularly useful in producing germicidal soaps, tending to increase the absorption of curative agents. Even small traces of cholesterol, it is maintained, enhance the cosmetic effect of toilet soaps. Cholesterol in an emulsified form, as present for instance in soap lather, easily penetrates the epidermis and imparts suppleness to the dermis.

A specific example of a superfatting mixture consists of approximately five parts cholesterol, eight parts lanolin, fourteen parts cetyl alcohol. An excess of cholesterol, incidentally, reduces the lathering power of soap to a greater extent than does lanolin.

Cholesterol-polyoxyalkylene ethers obtained by reaction of cholesterol with alkylene oxide in an autoclave at about 130 deg. C. have been patented and products of this nature are described as having special properties of importance, particularly as dispersing, solubilizing, wetting and emulsifying agents etc.

Substances for addition to wetting out, foaming, dispersing, etc., have been found in the form of sulphonated ethers or esters of e.g. cholesterol and a polyhydric alcohol containing one or more monoesterified acid radicals of boron or phosphorus.

VITAMIN PRODUCTION

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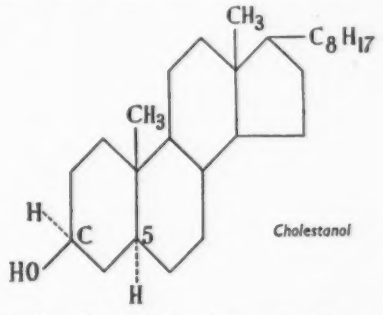

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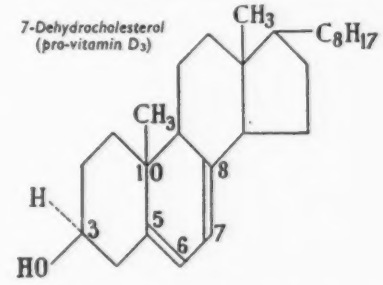
7-Dehydrocholesterol (pro-vitamin D_3)



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crystallizing in plates from a methanol-ethyl ether mixture with water of crystallization. Some properties are:

Chemical formula	$C_{27}H_{44}O$
Melting point	142/3 deg. C.
Specific optical rotation	$(a)\ ^{20}_{D}$
	$= -113.6$ deg.
Molecular weight	384

It oxidizes in air. The reactions of this sterol are very similar to those of ergosterol, giving a peroxide, a maleic anhydride addition product and a series of isomers. Its absorption spectrum is also similar to ergosterol, as is its color reaction with antimony trichloride in chloroform. Dehydrocholesterol is precipitable with digitonin. It is not readily soluble in methyl alcohol, but readily soluble in ether. It contains one hydroxyl group and two double bonds.

In commerce this product has been obtained from cholesterol by first converting the latter in the form of its acetate, by means of chromic acid, into 7-oxocholesteryl acetate, followed by reacting this with aluminum alcoholate, esterification, heating—to decompose the ester—and final saponification.

A similar method consists of the preparation first of the benzoate of cholesterol, followed by conversion to oxocholesterol benzoate via oxidation with chromic anhydride, reduction with aluminium isopropylate yielding hydroxycholesterol monobenzoate which is then modified to the dibenzoate in pyridine by reaction with benzoyl chloride. This dibenzoate can be made to yield dehydrocholesterol by heating with an amine, followed by saponification.

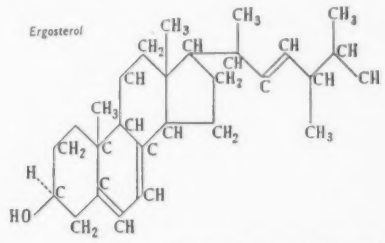
ERGOSTEROL

Ergosterol, which, according to one report, accompanies cholesterol in quantities around one hundredth per cent, is the most highly unsaturated and easily oxidized of the sterols. It becomes yellow on oxidation and changes into a brown liquid. It forms a stable peroxide, by the action of eosin and light, for instance. The action of light alone partially dehydrogenates the product. It is known that it deteriorates during storage (ch. cholestanol). If stored in an atmosphere of nitrogen in the dark and at low temperature, the rate of deterioration is reduced but not prevented. Ergosterol has never been prepared synthetically from sterols or like substances, being obtained from yeast. It is present in penicillium and other fungi. Ergosterol and its reduction products are precipitated by digitonin. Prolonged heating tends to decompose this sterol.

It contains one hydroxyl group and three double bonds. Some properties are as follows:

Melting point	160/1 deg. C.
Specific optical rotation	$(a)\ ^{20}_{D}$
	$= -122.3$ deg.
Molecular weight	396
Chemical formula	$C_{28}H_{44}O$

Ergosterol gives a complicated mixture of products on irradiation, including the unsaturated alcohols, lumisterol, tachysterol, provitamin D_2 (Calciferol), toxisterol and two suprasterols all of the same formula as ergosterol. Only the calciferol has anti-rachitic properties.

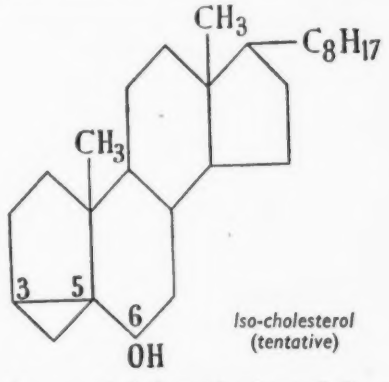


Similiar results have been obtained by subjecting the sterol under low pressure to an electric charge operating at a frequency of 5000 to 20,000 kilocycles per second for 5 to 50 minutes.

ISOCHOLESTEROL

A product, "Isocholesterol" would next come under review, but for the work of several investigators during recent years who showed that wool wax alcohol derivatives to which the term "isocholesterol" was applied, were a mixture of two triterpene-like alcohols, different in structure from sterols.

A pure i-cholesterol ($C_{27}H_{46}O$) has been described and seems to be a product of recent origin and accidental discovery. It is not precipitated by digitonin and contains no double bond, but does contain one hydroxyl group. Upon hydrogenation in the form of its acetate, dihydrocholesterol acetate results. This has been used for the preparation of hormone-like materials.



Iso-cholesterol (tentative)

Other isomers of cholesterol exist, including allocholesterol, epi-alocholesterol and epicholesterol, but no mention is to be found yet in the sterol literature of any connection between these isomers including true i-cholesterol and wool wax alcohols.